

# COAL AGE

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## More Trouble for Coal

**N**O sooner do we begin to feel confident that the relief from Government interference with coal shipments and the problems of bad winter weather are well past, than the coal industry finds itself confronted with a new and perhaps equally serious situation through the unwarranted strike of railroad workers. Just where it will all end we would not venture to prophesy. We know the immediate result has been increasing difficulty in the movement of coal which cannot be entirely obviated for several weeks, even though the strike situation is promptly and completely cleared up. We are beginning to believe that Job had an easy time of it as compared with the traffic man dealing with the present season's coal problems.

**T**HERE is one element in this present coal situation, however, over which the producer has control, and that is the price. We trust that this present complication will not tempt the operators to increase prices beyond reason. The industry clearly owes it to itself to have the prices adequate to provide fair and generous returns upon invested capital. However, it is the equal responsibility of the industry to refrain from exacting excessive profit in time of emergencies or complication as thereby a permanent disadvantage to the industry results which really far outweighs the temporary financial profit. A run-a-way market is one of the things likely to be most disastrous and we trust that the present railroad crisis will not serve to aggravate the condition in this direction.

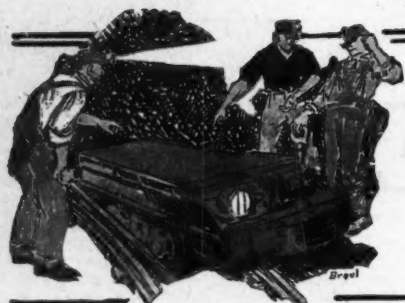
**A** PUBLIC clamor is easily roused and when the public mind is disturbed, the demands become loud and insistent. Moreover

the President still has legal authority to step in and regulate the affairs of the coal men. Certainly the spirit of our national as well as state and local legislators is not any too friendly to the coal industry just now.

**W**E are confident that the producer has in general not been the one primarily at fault in these matters. However the producer is the one most seriously affected if the brakes are not put upon these wild wheels of the industry at once. Fortunately the operators have the leverage whereby they can readily and immediately apply these brakes. However, if this adjustment is attempted in one single stroke, we can see only evil consequences in store. It is necessary that we should "keep our feet on the ground," and not be stampeded into a period of wild price fluctuation.

**A** SANE, rational movement of prices to a suitable normal level will aid all good substantial properties, but the sudden irrational jumps which seem to have prevailed thus far this month can cause only harm to these interests. The speculator will thrive and grow rich on a run-a-way market but not so the conservative producer or dealer.

**I**T is essential in view of the present situation that the producers not only be conservative in their own price adjustments but that they see to it that their customers are also in the proper spirit. If you can not hold the jobbers and wholesalers with whom you deal to a reasonable basis, it is up to you to tie up with someone else who will consider the permanent good of the industry and not seek to take undue advantage of the great public need for coal and of the shortage of coal in the market.

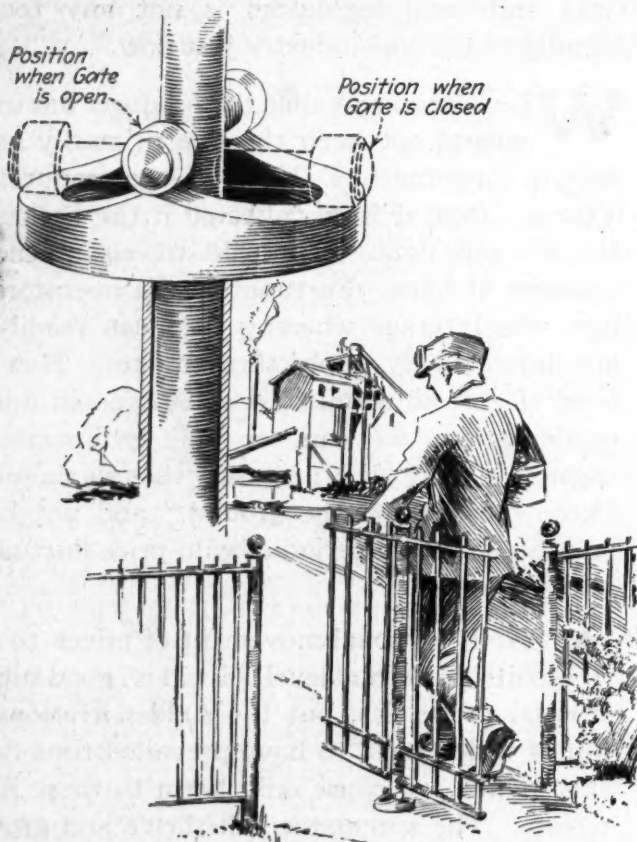


# IDEAS AND SUGGESTIONS

PRACTICAL SCHEMES THAT MAKE THE DAY'S WORK EASIER

## Self-Closing Gates

The Philadelphia & Reading Coal & Iron Co. has a custom of sending foremen and others holding supervisory positions upon trips from their mine to other operations of the company, whereby they may acquire ideas for changes in their own mine that will be conducive to efficiency, safety and convenience. Such ob-



THE GATE IN OPERATION AND DETAILS OF ITS SUPPORT

servation tours also have a tendency to keep the men keyed up to the mark, for they are continually alert to secure and perfect new ideas that they may develop to their own and the company's advantage. As a result probably no other mines have so many special devices worked out as are to be seen at the operations of this company.

An excellent example of this enterprise is a self-closing gate devised by the blacksmith at the Silver Creek Colliery. The gate operates by gravity. Fastened to the ground is an iron shoe through the center of which is fastened permanently a post or guide, over which the center post of the gate fits. To the bottom of this post are fastened two rollers which fit and roll upon the shoe.

When the gate opens these rollers run up on the high part of the shoe, lifting the gate with them. When anyone passes through the gate and releases it the rollers naturally roll down hill again, automatically closing the gate.

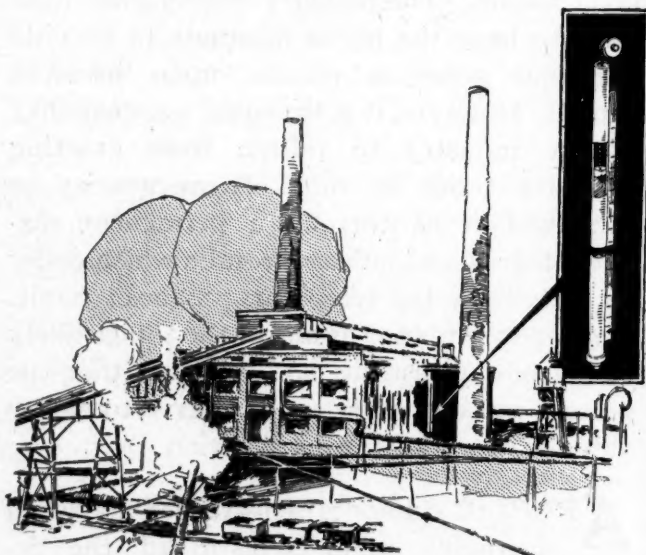
## Water Gage in the Power House

A convenient method has been devised by the boiler-house foreman at No. 14 mine of the Pennsylvania Coal Co., near Wilkes-Barre, Pa., to show the level of the water in the supply tank. This tank is located about 1,000 ft. away from the boiler house, consequently it is rather inconvenient to traverse this distance in order to ascertain the condition of the water supply.

As a result the foreman tapped the water main and connected it to a 4-in. standpipe made sufficiently high to be above the top of the water tank. In this standpipe a float is placed to which is attached a string that passes over a pulley as shown in the accompanying diagram and is attached to an indicator that works on a scale. As the water rises and falls in the tank it also moves correspondingly in the standpipe and therefore actuates the indicator in a similar manner.

An indicator of this kind is cheap and easy to install. Placing it within the boiler room permits the man in charge to have a visual indication of the water conditions before him at all times.

To those familiar with power plant work the advantage of placing an indicator in such a position is readily apparent. It saves the man in charge innumerable steps since it is then unnecessary to make periodic trips to the tank or even go to the door of the boiler room and strain the eyes to read a distant indicator.



TANK GAGE AND ITS INSTALLATION



## Transportation and Preparation System at Nanty Glo

Cars Are Hauled from a Slope by a Hoisting Engine, Brought to the Foot House by a Locomotive, and Elevated to the Tipple by a Chain Haul—The Cars Are Discharged One by One by a Revolving Dump and the Coal Is Picked on Ring-Shaped or We Might Say "Doughnut" Picking Tables

BY DONALD J. BAKER  
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ONE of the most interesting coal-mine plants in western Pennsylvania is that of the Nanty Glo Coal Mining Co. at Nanty Glo, in Cambria County. The interest lies rather in the method of handling the coal on the surface than in the general layout of the buildings or in the equipment they contain, though these compare favorably even with the newer mines of the Pittsburgh district.

At the ordinary shaft, drift or slope mine the transportation of coal from the face to the railroad car is of a more or less stereotyped character, every installation being almost identical with the others except for a few variations arising naturally from local topography and the seam level.

At Nanty Glo the opening to the slope lies at the foot of a hillside, along which run the railroad tracks that lead to the tipple. The slope passes under the tracks, and the mine cars must be elevated to tipple height before they can be dumped. The conditions that have been responsible for the surface layout have been in the main topographic, for the time has not yet arrived when surface contours may be artificially altered to suit the economic conceptions of the mining engineer.

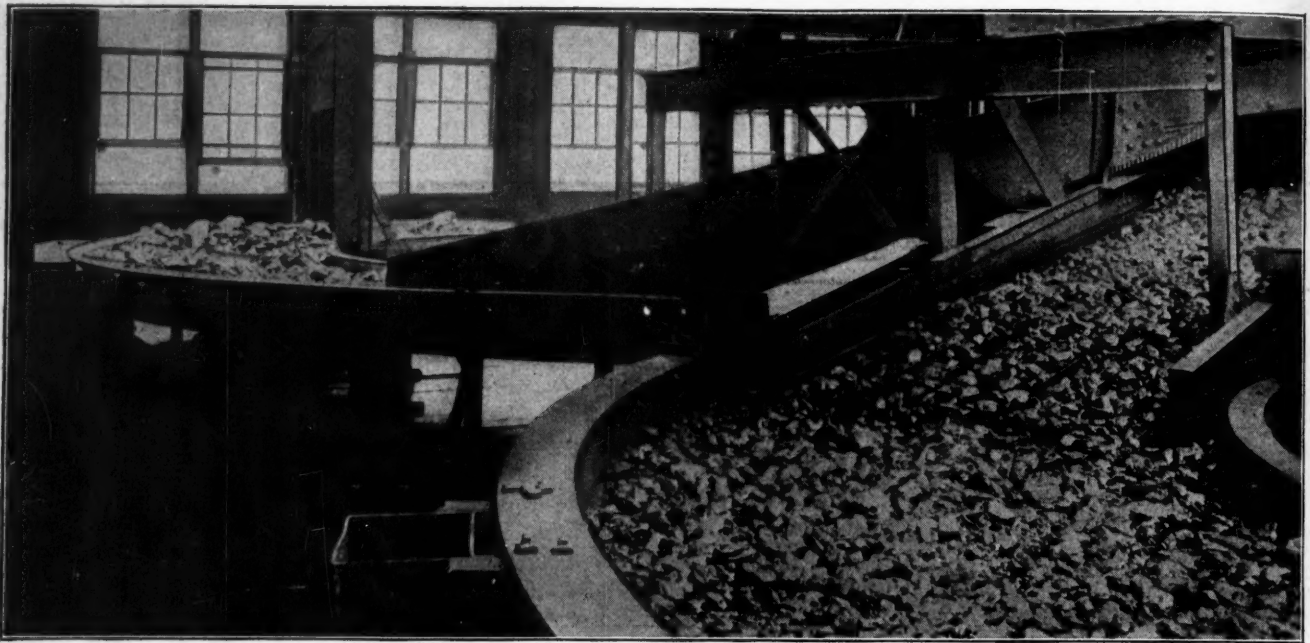
A tract of coal of over 3,500 acres is being developed at the Nanty Glo mine. This coal is the "B" or Miller Bed, which is the main stand-by in the Somerset and Cambria county fields. The tract lies in nearly rectangular form with the main haulage entries, which run as butt headings, lying parallel with the shorter

side of the rectangle. Thus the main face entries are at right angles to them or parallel with the longer sides of the same quadrilateral.

It has been proved by numerous drill holes on the property that the coal lies in a small basin, the bottom of which is approximately 8,000 ft. from the slope mouth, the coal at this point being under a cover of about 500 ft. From thence the coal rises, but after following it a distance of 4,000 ft. the property lines of the company are reached.

One might question why, in developing a tract of coal that lies in a formation such as this, a shaft was not sunk to the lowest point of the basin and the mine developed from both sides of the shaft bottom. Numerous factors enter into the selection of a plant site, and Nanty Glo was chosen as the best location for the following reasons: First, if the coal was to be developed from a shaft located over the bottom of the basin the plant would have been situated in a hilly section of country well removed from railroad connections. Also such a shaft would have been about 500 ft. deep. Second, the town of Nanty Glo is relatively old and well established and over 40 per cent of the men employed by the coal operator could be, and are now, housed in dwellings other than those owned by the company. House construction is a big factor in initial cost and in this case by suitably choosing the location of the mine much of the cost could be avoided.

Initial construction of this plant began in February



COAL REACHING THE REVOLVING TABLES FROM THE SCREEN

Although the coal from this operation is sold as run-of-mine it is nevertheless sized and picked, then remixed for shipment.

of 1916. It was estimated that the life of the mine would be approximately fifty years. Because the approach to the mine is from the side and not at the center of the territory the main haulage entries will some day be over two miles long. The main face entries will be driven off these on either side and will extend between 8,000 and 10,000 ft. Thus, at the time when the mine reaches its period of greatest development, the cars will have to be transported underground a distance of over four miles.

The coal dips about 5 per cent much of the way from the entrance of the main slope to the bottom of the basin. Present data indicate that it rises at the same grade from that point to the property line toward which the main slope is directed. Eight headings have been driven from the foot of a hillside toward the basin, these being driven, as stated, parallel with the shorter side of the tract. Four of these entries are used for haulage. The two outer entries are utilized as air courses. These passages were not driven from the outcrop but from a point well above it. In consequence they had to be driven through rock for a distance of 1,000 ft. before coal was encountered. They slope, where they pass through the rock, on a grade of 10 per cent.

From the point where the coal is reached the entries follow the bed and in consequence dip thereafter on a grade of 5 per cent. The underground workings are now in a decidedly undeveloped state as compared to what they will be after a period of, say, 20 years. To date few pillars have been removed. So far the work underground has been confined principally to opening up the development system that has been planned for the future.

The main haulage entries are 4,000 ft. in length, 3,000 ft. of which distance is on a slope of 5 per cent. This is the distance over which the hoist engine now operates. However, the entries have been driven another 3,500 ft. A little over 500 ft. is yet to be driven before the bottom of the basin will be reached. Thirteen-ton Westinghouse barsteel locomotives are used on such sections of the main haulageways as are

not reached by the cable. These must, of course, haul the loaded cars on the upgrade.

When the bottom of the basin has finally been reached the loaded cars will be hauled from this point to the surface by the hoist engine. Trolley locomotives will bring the loaded cars to the bottom from the opposite side of the basin and they will be able to haul back an equal number of empty cars up the same grade.

Trolley locomotives will haul the cars along the main face entries as well as on the extension of the slope up the opposite side of the basin, while Iron-ton, Mancha and Goodman storage-battery locomotives will be employed in the butt entries and within the rooms. Hockensmith Wheel and Mine Car Co. "solid" or gateless cars of 2-ton capacity are in use.

The power plant is located in the building on the left of the slope and about 200 ft. from the slope portal. One room in the building is utilized in housing the 800-hp. Vulcan twin-cylinder steam-driven hoist engine. The cylinders measure 30 x 24 in. and the drum is 6 ft. in diameter and capable of holding 8,000 ft. of 1½-in. cable. Trips of empties averaging 35 cars each are dropped down the slope at a speed of 1,800 ft. per minute. The loaded trips are brought out at a speed of 950 to 1,000 ft. per minute. The hoist is designed to handle 200 tons per trip, but at present the trips rarely exceed 150 tons each, as a heavier car train is not yet needed.

From the drum on the hoist engine the cable passes to a bullwheel located 500 ft. away and on a projection of the main haulage slope. Thus there is a distance of approximately 600 ft. from the top of the knuckle at the slope opening to the bullwheel. The loaded trips are brought to the landing above the knuckle, where the cable is disconnected. A 15-ton Westinghouse trolley locomotive takes the trip from this point to a foot-house which is the bottom approach to the tiple. The distance to the foot-house from the landing above the knuckle is about 1,500 ft., most of which is on a slight grade in favor of the loads. The storage yards adjacent to the foot-house will accommodate 125 loaded cars. After the locomotive has hauled a trip to the foot-house it

switches off to parallel tracks that serve to hold the empty cars. Then a trip of empties is made up and the locomotive returns to the landing near the slope opening.

The foot-house is of simple steel construction, as can be noticed in one of the illustrations, and serves merely to cover the trip-making and car-feeding mechanism and protect the man in charge of its operation from inclement weather. As the first car of a loaded trip enters the foot-house it is engaged by one of the dogs on the chain-haul and the entire trip is moved forward one car length, after which the operation of the car-haul is suspended by the operator in charge.

The first car is now clear of the car-haul mechanism and is in the opposite entrance of the foot-house. It is uncoupled from the trip at this point, and proceeds by gravity for a distance of 75 ft. into a check rail at the foot of the incline which forms the approach to the tippie. This check rail is so adjusted that the loaded car is held by it and does not pass through. A 15-hp. Westinghouse motor operating on a 440-volt alternating current drives the trip-making and car-feeding devices.

The loaded car is now in position in the check rail, where it remains until the next dog in the uphaul chain engages it and starts it up the incline. The head sprockets of both up haul and down haul are placed upon a shaft which is driven through a geared connection by a 75-hp. Westinghouse motor. Both chains are operated by the same motor and are controlled by the man in charge of the car dump at the head of the tippie.

The raising of the loaded cars from a point that is lower than the railroad tracks beneath the tippie to a position at the top of this structure by means of an endless chain over an inclined plane gives this tippie somewhat the appearance of an anthracite breaker—

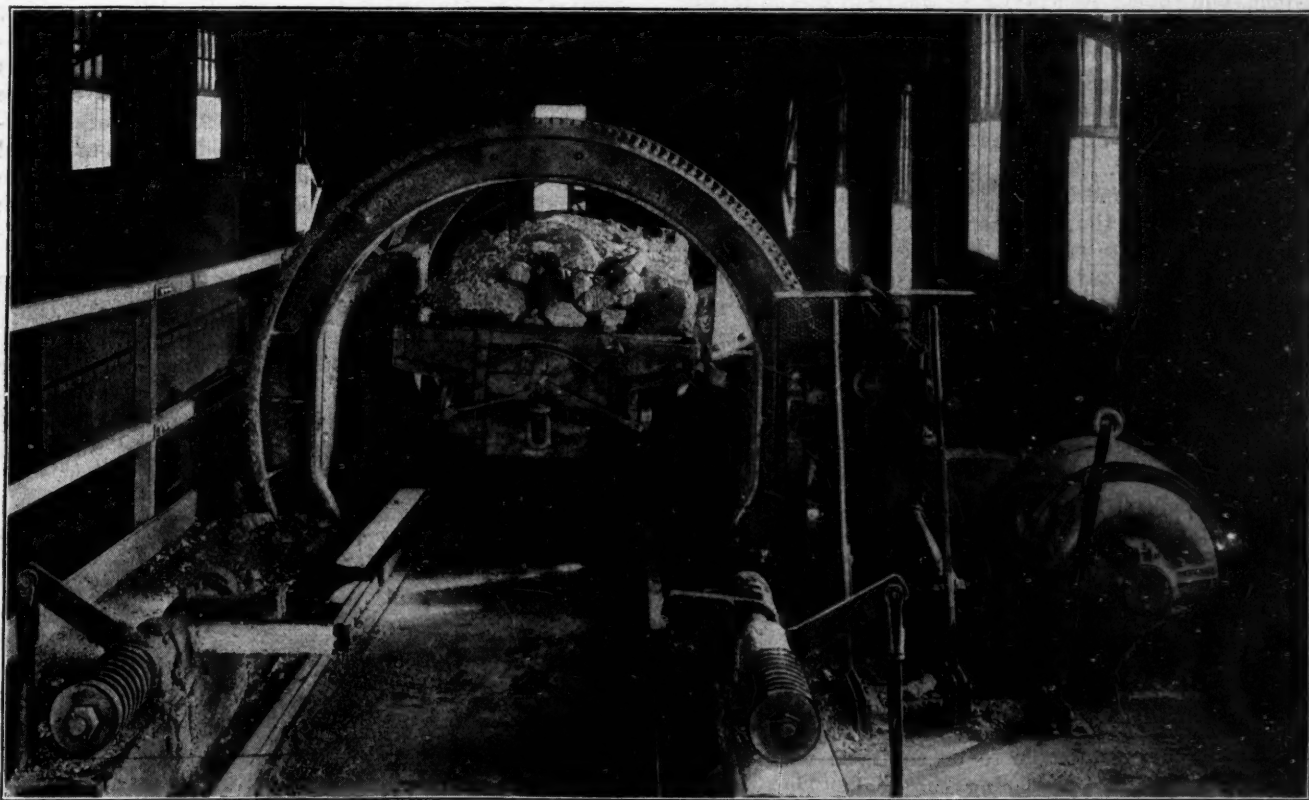
a design that is quite uncommon in the Pittsburgh district. The incline is constructed on a 27-per cent slope and is 220 ft. long, which makes the distance from the bottom to the tippie about 212 ft. in a horizontal direction.

Fifteen loaded cars can be accommodated on the uphaul chain, each car weighing about 6,100 lb. This chain has a speed of 74 ft., thus feeding the loads into the tippie at the rate of four per minute.

The downhaul and the uphaul chains, while driven by the same motor, are connected by different gears so that the speed of the downhaul chain is greater than that of the uphaul. This arrangement causes the empty cars to be handled with greater dispatch than the loaded ones and so prevents congestion within the tippie. About 76½ ft. per minute is the speed of the downhaul chain, which allows six empty cars to be returned each minute if need be. The incline itself is constructed with a wooden platform which is supported by steel bents.

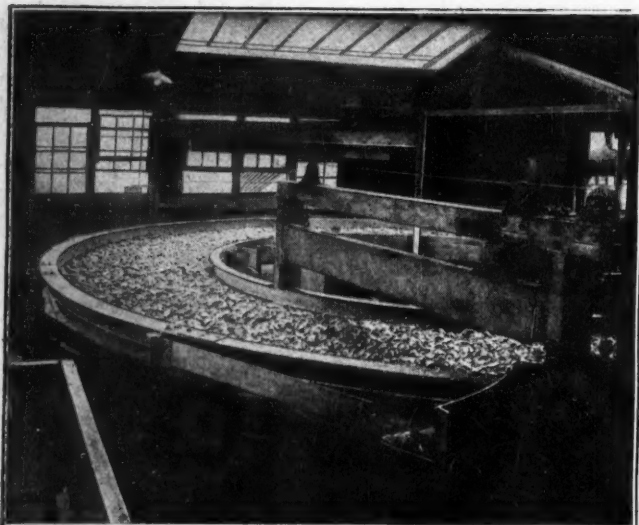
As the loaded cars reach the top of the incline they are disengaged from the dogs of the chain, which passes over the sprocket to return to the bottom on the under side of the plane. The cars drop by gravity into two horns which are located at the front end of a rotary dump. This dump is operated by a separate 15-hp. motor. The horns over the track within the dump are released automatically as the operator throws to one side the horns that lead to the dump. The loaded car then assumes the position in the dumping mechanism that was occupied by the last empty car. The horns holding the car within the dump are, of course, returned to their vertical position after the empty car has passed out.

The new or loaded car is then inverted by a com-



ROTARY DUMP IN THE TIPPLE AT THE HEAD OF THE INCLINE

This power-driven dump has made possible the use of solid or gateless cars, thus not only simplifying car construction but preventing waste and spillage from loose or ill-fitting end gates.



A PORTION OF THE NUT TABLE

One of the plows used for removing carloads of slate or refuse may be seen in the foreground.

plete revolution of the dumping mechanism, which has a speed of 9.5 r.p.m. This type of dump is operated by a pinion engaging in the geared circumference of the revolving portion. The rotary dump has made permissible the use of solid mine cars, and this has resulted in a considerable saving in their first cost. It has also reduced the cost of their maintenance to a low figure. Certain economies have been effected through a reduction in the coal spilled on the haulage roads, since cars of the old type allow the contained material to leak out around the end gates.

When the empty car is released from the dump it travels down grade to a kick-back in the rear of the tippie, and thence by gravity to the head of the incline, where it runs into a check rail and is held until the next dog in the downhaul chain pulls it out, when it starts down the incline.

The empty cars on the downhaul chain are released at the lower end of the incline and drift into the foot-house by gravity. At this point the car is engaged by the trip-making mechanism. The dogs on this haul are of solid construction and serve to push all the empty cars in the storage yard ahead one car length by forcing the last empty from the incline through the foot-house. In this manner both empty and loaded trips are made up as well as broken up at the foot-house. The empty cars, however, are not coupled together until they reach the storage yard.

This system of handling the loaded cars from the slope portal to the tippie has given entire satisfaction. By it 2,500 tons of coal are dumped daily at this tippie, which incidentally is its capacity.

The tippie, which is of steel framework with corrugated-iron siding, in the arrangements adopted for preparing coal is vastly different from similar buildings encountered in this district. Although practically all of the coal loaded is shipped as run-of-mine, it is first thoroughly sized into lump, egg, nut and slack in order to insure efficient picking. After being picked the various sizes are collected upon one loading boom.

This is the first tippie to be equipped with circular picking tables for preparing the coal. The complete structure was designed, fabricated and erected by Heyl & Patterson, Inc., of Pittsburgh.

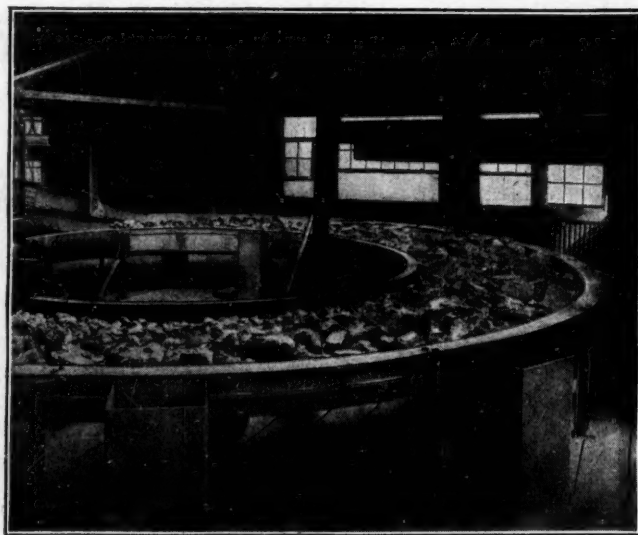
To descend to details, the coal from the rotary dump

is passed to a reciprocating feeder that delivers it at a uniform rate to a double-decked balanced shaking screen, which causes the lump and egg sizes to be delivered to opposite sides of one picking table. The nut size passes to a separate picking table while the slack goes to a chute and thence by gravity direct to the loading boom. Both feeder and shaking screens are driven by a 25-hp. Westinghouse motor, while the screen has a 6-in. stroke, and the eccentric shaft makes 110 r.p.m.

The circular or "doughnut" picking tables are built up of structural steel shapes and plates. Each has an outside diameter of 25 ft. and an inside diameter of 15 ft. and each is mounted on 70-lb. rails that move upon 12-in. double-flanged car wheels carried by shafts supported directly from the tippie frame. Both tables are driven by a 20-hp. motor through a vertical shaft pinion and segmental gear. The rotating speed of the tables at the center is 40 ft. per minute. Should a car of rock or inferior coal accidentally be delivered to either picking table, a plow is lowered which directs the undesirable material direct to the refuse hoppers.

The arrangement within this tippie—providing as it does for the thorough preparation of the coal—immediately impresses one. There is but little machinery and an entire absence of conveyors. These details lessen the chance for delay to operation that might arise from breakdowns in machinery. The resultant economy in upkeep is noteworthy. Compactness also is apparent and leads to efficient supervision by a picking boss who is able to see the work of the pickers and the condition of the tables at all times. Intelligent supervision in the preparation processes is a highly important factor if the equipment is to serve the purpose for which it was built.

To take care of cars containing rock—and many such cars must be handled at any mine that is working the Miller bed—a hinged gate that is operated by compressed air is provided. When rock is dumped this gate is reversed so that the contents of the car are dropped directly into a rock bin. Slate and other foreign matter are removed from the coal by men stationed around the tables, who toss the extraneous material into steel chutes which lead to one general hopper, from which point it is removed by car to a dump on a hill—



GENERAL VIEW OF THE LUMP TABLE

The two tables are exactly similar but are installed upon opposite sides of the room.

side to the rear of the tippie. The capacity of the rock bin is 20 tons. The rock is removed to the dump by the same car that handles the slate pickings.

An emergency run-of-mine chute has been provided which may be utilized in the event of the picking tables being temporarily out of order. After the large lump sizes and the nut have been cleaned they are united with the slack on the loading boom as cleaned run-of-mine. Most of the output from the Nanty Glo mine goes to tidewater to be used on steamships and little of the product is loaded as separate sizes.

As has already been mentioned, the surface equipment at this plant is all high class. Other units must be passed over at this time, with the exception of a power plant that imperatively demands a short description. Interest in this building centers in the boiler room, where three 446-hp. Badenhause boilers have been installed. These were manufactured by the Combustion Engineering Corp. Each boiler is equipped with a type "E" automatic stoker and forced draft. Entering water is heated to a temperature of 208 deg. F. Overhead bunkers with a capacity of 180 tons feed directly to the stokers. The bunkers are supplied by cars from the tippie for which track is provided over the rock dump to the rear of the tippie and thence to the boiler room over a trestle.

The officials at Nanty Glo speak highly of the Badenhause boiler as a quick producer of steam. While only clean coal is used for firing at present, it is probable that the near future will see the installation of crushing apparatus and the utilization of cleanings from the picking tables. In the dynamo and engine room direct current at 250 volts is generated which is used within the mine. Alternating current at 2,300 volts is reduced to 440 by transformers and used in general around the surface plant.

The officials at Nanty Glo include John W. Harrison, superintendent, and Roy Sharpless, chief engineer. Both these men were connected with Berwind-White interests before taking up the supervision of the Nanty Glo Coal Mining Co.'s plant. Both are well known in the Cambria and Somerset County fields. I wish to acknowledge their generous assistance in preparing this article on the Nanty Glo operation.

## Can Coal Be Cleaned by Flotation?

THE flotation process consists in the forming of an emulsion of oil and water by agitation and the floating of certain mineral bodies away on the surface of the liquid thus produced, leaving the impurities to sink to the bottom. It has been used hitherto only to separate metallic minerals from their earthy impurities, or "gangue."

Some time ago J. R. Campbell, chief chemist of the H. C. Frick Coke Co., in an article read before the American Institute of Mining and Metallurgical Engineers spoke of flotation in the cleaning of coal as a remote possibility. Now word comes from the London Stock Exchange to the effect that investors are all agog over the remarkable advance of the shares in the Minerals Separation, Ltd., which holds, here and in Great Britain, the most important patents relating to flotation. It is said that a few weeks ago the stock sold for \$9 and is valued now at £200.

With the value of the stock *Coal Age* readers are not concerned, but they will be interested to know that by

this process the total cost of recovering a ton of coal for conversion into briquets is said to be only about 5s. (\$1.21 at normal exchange, or about 99c. at present rates). The briquets can be sold at 30s. (\$7.30 at normal or \$5.94 at present rate). It is said that while the mine owners are not permitted to make more than 1s. 2d. per ton (28c. normal exchange and 23c. at present) for coal newly mined, they are permitted to make all they can on coal rescued from the dump. The company has, it is said, purchased large quantities of coal waste, while numerous collieries are contracting for the right to use the process, which has proved so valuable in the extraction of copper. Report adds that the specific gravity of coal being low, the quantity of flotation oil needed is small compared with the amount that is used in the process when metallic ores are being prepared.

## Export of Coal from Scotland Shows Increase

Output During 1919 in Fifeshire Was Nearly 10 Per Cent Greater Than in 1918—Greater Promise Shown for 1920

COAL output during 1919 in Dunfermline, Scotland, according to a report by Consul Howard D. Van Sant, has shown an increase, with prospects that extensions in the coal fields of Fifeshire will make for further improvement in 1920. At Methil, the largest coal shipping docks in the Dunfermline district, the coal exports for January amounted to 52,000 tons, while in December of 1919 the monthly export totaled 169,000 tons. The total coal exports for the year 1919 from Fifeshire ports amounted to 2,567,400 tons, an increase of 215,700 tons over 1918.

In pre-war days a 100,000-ton shipment of coal was the usual weekly average but during the war the total fell to about 40,000 tons weekly. There appears to have been a shortage of coal wagons, making frequent the stoppage of work at the collieries of several hours daily, yet from 5,000 to 8,000 more men have been employed in coal mining in the district than during 1918.

A new pit has been sunk at Lochore to provide better ventilation for the more important Mary pit close by, and when in full working order this improvement should largely increase the output of that pit. Early in the summer the surface buildings of the Lindsay pits at Keltly were destroyed by fire. Now the proprietors, the Fife Coal Co., are constructing the most up-to-date plant, much of it on the American concrete construction plan.

The Saline Valley coal district, comparatively non-productive to any extent for many years, has again changed hands and promises are made that the northwest corner of Fife will again become a large and busy coal field. Retail coal of the best quality has been selling in Dunfermline at the rate of \$10 per ton, including cost of cartage, during the past year, being rationed according to the need of the householder. At times it has been difficult to obtain at any price.

It is said the war, the loss of tonnage resulting from the coal strike, the shortage of men and coal wagons, and the increased demand of shipping, both foreign and domestic, are the principal causes of the coal shortage. Dunfermline adjoins some of the finest and most important coal fields of Scotland, yet frequently coal has been almost unobtainable during the past few years.

# Correct Method of Trolley-Wiring Mines\*—I

How, Under the Various Conditions in the Mines, to Plan Dead-Ends and Suspensions so as to Reduce Maintenance Charges and Secure Satisfaction

By M. W. BEDDOW  
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IN compiling the following instructions covering the installation of trolley wire within the mines, the various fixtures are described one at a time. Under the description of each fixture is a discussion of the reasons for standardizing that particular fixture. The separate parts making up these fixtures are numbered and by referring to Table I it can be easily seen what materials go to complete each unit. The instructions here given deal only with the hanging of trolley wire in the mines and have no reference to its support above ground, the construction of feeder lines, telephone lines or bonding.

(1) The dead-end fixture (Fig. 1) is used at the end of the trolley wire and is made up of materials Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 31.

The wedge grip fastens onto the trolley wire itself



FIG. 1. PREFERABLE DEAD-END FIXTURE

In this fixture the various elements are so arranged that when it becomes necessary to extend the trolley line the whole combination may be moved bodily to its new location.

and does away with the necessity of putting a bend or kink in this conductor and fastening it with wire-rope clips. When it is necessary to extend the wire, the wedge grip is easily knocked loose and the entire dead-end fixture is carried ahead to the new termination of the trolley wire, where it is again used in dead ending. Thus the end of the wire is always left in good shape so that the splicer may be slipped on quickly and easily. Waste and kinks, which are common when the trolley wire is bent and fastened with clips, are thus avoided.

In purchasing the strain insulators (3) care must be taken that the eye of the insulator will fit into the clevis on the wedge grip and that the eye of the turnbuckle will fit into the clevis on the strain insulator. Several different kinds of 3-bolt guy-wire clamps are upon the market, but the one that has a square hole in one piece and uses a carriage bolt is the easiest to work with and should be specified.

The expansion bolt (8) should be put in so as to slant slightly forward or away from the end of the wire. The hole should be drilled at least 9 in. deep for an expansion bolt 6 in. long. Then in case it is

desired to take the expansion plug out, there is room to knock the bolt, together with the expansion plug, up into the hole, thus loosening the expansion shell in the hole and permitting it to be withdrawn without difficulty. The shoulder of the eyenut (7) should be screwed up to or even into the hole so that the outside diameter of the eyenut rests firmly against the roof. Otherwise when stress comes on the eyenut the expansion bolt probably will bend.

As the wire is extended this dead-end fixture may be used repeatedly. This necessitates the use of a thimble. Otherwise the strand would be kinked and when moved ahead it would be kinked at another point, and after a few moves it would quite possibly break at one of the kinks.

About 10 ft. of  $\frac{3}{8}$ -in. galvanized steel-wire strand (5) is used in this fixture—enough so that if the end of the wire reaches just past an expansion bolt regularly spaced, the eyenut can be screwed on the next expansion bolt and the  $\frac{3}{8}$ -in. steel strand will be long enough to go through the eyenut, thus eliminating the necessity for placing another expansion bolt half way. One end of the  $\frac{3}{8}$ -in. steel strand is spliced into the eye of the uninsulated turnbuckle; the other end passes through the eyenut and is fastened back on itself with the 3-bolt guy-wire clamp (6).

These dead-end fixtures are made up in the wireman's shop, which may well be conveniently located within the mine itself.

There are no sufficient reasons why figure-8 wire should be used instead of grooved wire or vice versa. Most of the reasons advanced, now for figure-8 and now in favor of grooved wire, are "office chair" arguments and do not amount to much in the mines.

It is claimed that 4/0 grooved wire offers a larger bearing surface to the trolley wheel than the same size of figure-8 wire. But put a trolley wheel in its harp

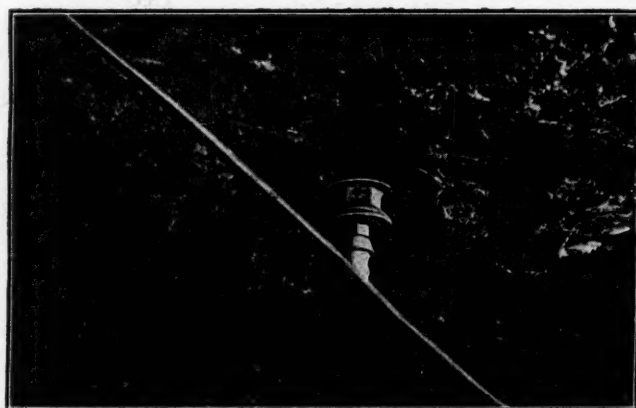


FIG. 2. SUSPENSION USED WITH MODERATELY HIGH ROOF

A single wooden plug driven into a hole drilled in the roof serves to support this fixture.

\*In the preparation of this article I have been greatly assisted by D. M. Lambert, electrician, and John Pack, inside wire chief, of the Lundale mine, whose energy and experience were of great value in the work and study that led to the adoption of the standard fixtures described.

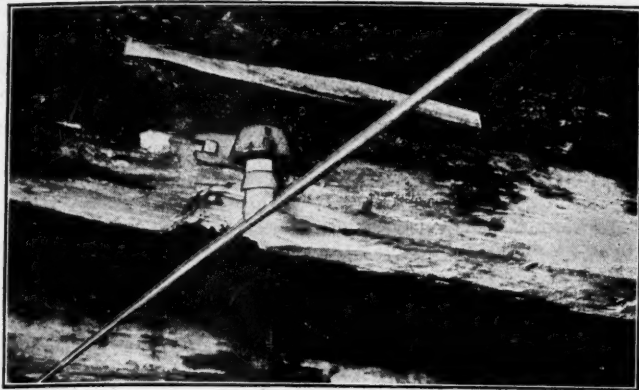


FIG. 3. SUPPORT ATTACHED TO TIMBER

Where timber sets are employed to hold up the roof the trolley support here shown is simple and effective.

and fit it against a piece of 4/0 grooved wire, sight between the trolley wheel and the wire and notice the arc of contact. Do the same with a piece of figure-8 wire of the same size, and it will be immediately apparent that this argument does not mean anything. It is claimed that the figure-8 wire keeps the trolley wheel away from the clamps better than the grooved wire and there is not so much arcing at the suspensions when this shape of wire is used as when grooved wire is employed. Give this the same test with the trolley wheel and you will see that this is not entirely true.

Arcing at the suspensions frequently arises from the trolley spring being too weak, the trolley pole being crooked or the harp bent, a bad wheel or bushing or perhaps from the trolley clamp being out of alignment with the wire. Figure-8 wire can be held more firmly in the clamps than grooved wire, consequently it is not so easily jarred loose or forced out of the clamps when a small scale of slate falls upon it. There is no possibility of figure-8 wire being placed in the clamps wrong, while it frequently happens that grooved wire, especially when it has been knocked down a few times by slate falls, gets so badly twisted that it has to be placed in the clamps in the same manner as round wire—that is, the jaws of the clamp are not placed in the grooves. With figure-8 wire, notice how the groove comes out of the jaws of the clamp.

This discussion covers 4/0 grooved and figure-8 wire only; 2/0 grooved wire should not be used at all in the mines. It soon gets so badly twisted that the grooves cannot be put in the clamps properly and it is hung similarly to round wire but of course not as efficiently as round wire can be suspended.

If a new mine is being opened nothing but 4/0 grooved trolley wire should be used. If a mine has been opened for some time and an appreciable amount of 4/0 figure-8 wire is in place, its use should be continued without change. I do not believe that anything smaller than 4/0 trolley wire should be used, and in these instructions it is understood that all fittings and material are for 4/0 grooved wire.

(2) Suspensions are used to hold the wire in place. There are different types, depending on the height of the coal and whether they are fastened in the roof or to timber.

(a) In high coal 5 to 7 ft. in thickness, and where the roof is used to support the wire, the fixture (see Fig. 2) composed of parts 8, 9 and 10 is used.

(b) In low coal 3 to 4½ ft. thick, where support is from the roof, the fixture composed of parts 8, 10 and 11 is used.

(c) In high coal where timber is installed as a support the fixture composed of materials 9, 10 and 12 is used.

(d) In high coal where support is from the roof and where a cheaper suspension is desired a fixture composed of materials 9, 10, 12 and 13 may be employed.

(e) In low coal where timber is used as a support the fixture (see Fig. 3) is composed of materials 10, 14 and 15.

(f) In extremely high coal or where the top is taken down or falls, leaving a distance between the top of rail and the roof of over 8 ft., or where more than two hangers are necessary to bring the wire into vertical alignment on account of inequalities of the roof, the fixture composed of materials 9, 10, 16, 17 and 18 is used.

Remarks.—The holes for the expansion bolt must be drilled the correct size, i.e., 1½ in. in diameter and 9 in. long. If the holes are drilled too large the plug will be drawn down in forcing out the expansion case and therefore will have but little holding power.

The hole should be driven at least 9 in. long so that when it becomes necessary to reclaim the expansion bolt it can be driven upward into the hole, thus loosening the expansion case, which can then be easily extracted. The diameter of the drill bits used should be checked up daily so that holes of the proper size will be drilled for the expansion bolts.

The universal mine hanger (9) is a strong, substantial and easily installed device. Its broad, hexagonal surface affords room for a wireman to use his wrench without risk that it will slip off and cause him to scrape his fingers against the top. The hanger is screwed onto the expansion bolt until the expansion case is sufficiently swelled to fasten it into the roof. With many hangers it is difficult to tighten the expansion cases. There is not enough square or hexagonal surface upon them to afford a secure hold for a wrench. With some hangers I have seen it is necessary to screw

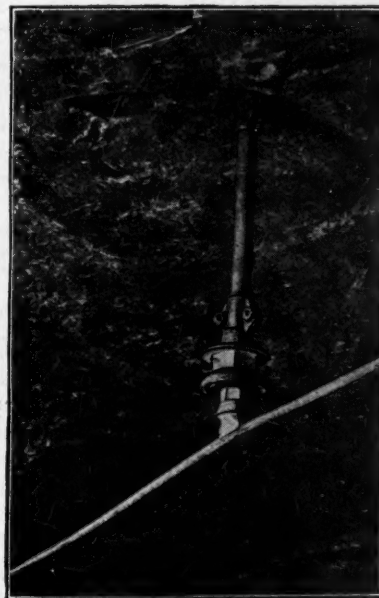


FIG. 4.  
Trolley  
Support Used  
with  
High Roof

Where the roof is high pipe extensions are employed to bring the trolley clamp to its proper elevation above the rail.

upon them another hanger with a broad surface where the wrench can be applied in order to secure them upon the stud of the expansion bolt and tighten the expansion case securely.

The "Sure Grip" clamp is strong, possesses tremendous holding power and is easy to apply. In place of the expansion bolt (8) a wooden plug (13)  $1\frac{1}{2} \times 4$  in. can be used, as indicated in suspension (d). This plug requires a hole  $1\frac{1}{2} \times 5$  in. It does not make as good a job as the expansion bolt, for under stress the lag-screw support will pull out or give to one side. The material cost, however, is less.

Where the lag-screw support is used a hole is drilled either in the timber or in the wooden plug, whichever the case may be, with a brace and a  $\frac{1}{2}$ -in. auger bit. In fastening the type "P" mine hanger (14) to the timber it is better to drill these holes also for the lag

port or extended suspension that is hard to surpass. If the pipe becomes bent or if, for some other reason, it becomes necessary to take it out, this is easy to do. Loosen the bolts in the expansion case and the pipe clamp and the pipe is released and the whole thing can be taken down.

Where two hangers would bring the wire down into alignment a pipe suspension is not used, but where more than two hangers are necessary a pipe suspension (Fig. 4) should be provided. When, in an emergency such as a slate fall or the right material not being on hand, it is necessary to use three or more hangers to bring the wire down into alignment, these hangers should be promptly replaced with a pipe suspension.

In mines where the roof is extraordinarily high, so that suspensions of this sort cannot be used satisfactorily, the wire can be supported by means of cross spans of  $\frac{1}{2}$ -in. galvanized steel-wire strand fastened to the rib on each side with straight-line hangers such as are used to support trolley lines on surface tram roads.

TABLE I. MATERIALS USED IN HANGING TROLLEY WIRES IN MINES

1. 410 Grooved trolley wire
2. Wedge grip. O.B. No. 12,634, opening in clevis  $\frac{1}{4}$  in., diameter of clevis bolt  $\frac{1}{2}$  in. Will take 410 grooved or  $\frac{1}{2}$  in. round strand
3. Giant strain insulator, 2 in. diameter with large eye and clevis
4. Uninsulated turnbuckle, O.B. No. 7,554, 12 in. opening;  $\frac{1}{2}$  in. eyebolts with 1 in. eyes
5.  $\frac{1}{2}$  in. galvanized steel wire strand
6. 3-bolt guy wire clamp, O.B. No. 3,206, length 4 in. with square hole and square head on bolt
7. Hubbard eye-nut, drop forged, to screw on  $\frac{1}{2}$  in. bolt; inside diameter of the eye is 1 in.
8. Expansion bolt. O.B. No. 10,073, 6 in. long
9. Universal mine hanger, O.B. No. 11,309, form 1, 2 in. high
10. Sure grip trolley clamp, C.W. No. 7,039
11. Type K mine hanger, O.B. No. 11,554, form 3, 1-5116 in. high
12. Lag screw support, O.B. No. 8,771
13. Wood plug, japanned, O.B. No. 8,770; diameter  $1\frac{1}{2}$  in., length 4 in.
14. Type "P" mine hanger, O.B. No. 11,032,  $1\frac{1}{2}$  in. high
15.  $\frac{1}{2}$  in. fitter drive thread lag screw, 4 in. long
16. Expansion case, G.E. No. 125,328
17.  $\frac{1}{2}$  in. galvanized iron pipe
18. Pipe clamp, G.E. No. 125,332
19. Type N hanger, O.B. No. 11,650, single curve, complete with separable arm
20. Wooden plug, diameter  $1\frac{1}{2}$  in., length 12 in.; to be split out of ash or other soft wood
21. Detroit trolley clamp, O.B. No. 10,972; 4-screw clamp
22. Type N hanger, double curve, O.B. No. 11,651, complete with separable arm
23. Clevis attachment, O.B. No. 11,104
24. Single Brooklyn strain insulator, O.B. No. 9,995;  $\frac{1}{2}$  in. eyebolt
25. Type D trolley frog, malleable iron with renewable bronze tips, 8 degree, 410 grooved; right hand O.B. No. 11,892; left hand O.B. No. 11,897
26. Type M mine section insulator switch, O.B. No. 11,600
27. Detroit double strain clamp, O.B. No. 10,370
28. Wooden plug,  $1\frac{1}{2}$  in.  $\times$  18 in., split at end with a wedge fitting in the split; to be made out of ash or other soft wood
29. Boards, 1 in.  $\times$  4 in.  $\times$  14 ft.
30. 8d nails
31.  $\frac{1}{2}$  in. rope thimble
32. K-I splice, 15 in. long, O.B. No. 8,573
33.  $\frac{1}{2}$  in. galvanized steel wire strand
34. No. 6 galvanized iron wire
35. Dogs for K-I splice, O.B. No. 5,700
36. Renewable bronze cam tips, O.B. No. 11,277, for type D frogs.

screws. A  $\frac{3}{8}$ -in. bit is used in this case. Fetter-drive lag screws are used because they do not tear the wood when driven, and if they are given a few turns of the wrench at the finish they will have a greater holding power than the other types of lag screws that have been screwed up with a wrench from the start.

The  $\frac{3}{8}$ -in. pipe extension with the G. E. expansion case and pipe clamps is easy and inexpensive to install and is as strong and enduring as any other type.

The expansion case (16) requires the same size of hole as the expansion bolt (8), that is,  $1\frac{1}{2} \times 9$  in. The expansion case is first inserted into this hole and the pipe driven into place, expanding it against the sides of the hole. The bolts are then tightened, the expansion case gripping the pipe securely. If the pipe is too long and would bring the wire down too far out of alignment, it can be sawed off with a hacksaw to the proper length.

The pipe clamp is then bolted on the lower end of the pipe, the hanger screwed upon it and the clamp screwed on the hanger, thus forming an extension sup-

## Large Gas Plants Planned

In the western part of Chicago, on the site where the People's Gas, Light & Coke Co. had planned to erect its large byproduct plant, the Koppers Co. has perfected plans for the construction of a coke oven and water-gas plant. The output of the proposed works will be 12,000,000 cu.ft. of coke oven gas and 30,000,000 cu.ft. of water gas each day. This gas will be sold to the People's Gas, Light & Coke Co. for the city supply of Chicago. The plant will be built by the Koppers Co. itself and its subsidiary, the Western Gas Construction Co.

The byproduct works will be built according to a new plan which provides for 100 ovens with a new type of triangular flue. Each oven will be 16 in. wide and considerably higher than the normal. It is expected that the plant will burn 20 tons of coal per oven per day, making the total plant capacity 2,000 tons of coal.

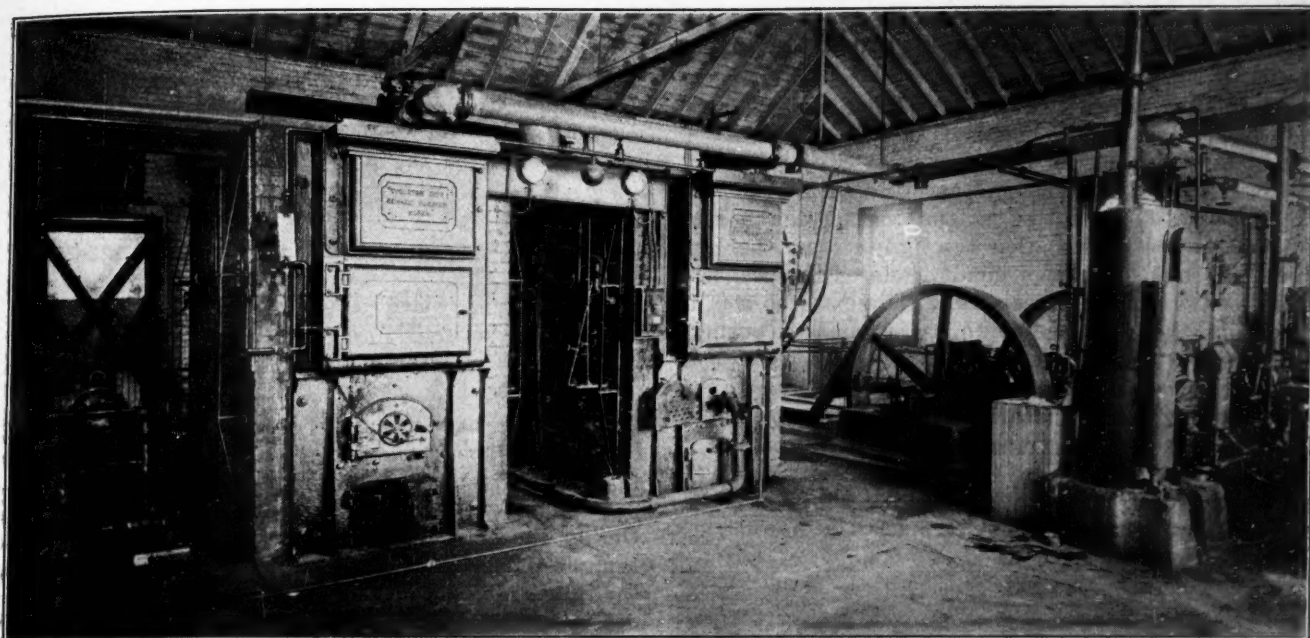
The kind of coal to be used has not been definitely determined as yet. The larger part of the coke which is of suitable size will be used in the production of water gas. However, it is planned to build in the future a number of producers which will supply the gas for heating the ovens, and then a considerable portion of the coke produced in the byproduct plant will be available for sale.

## Fusible Plugs in Air Lines

G. Chester Brown, Chief Mining Engineer of California, recommends in the *California Safety News* that a fusible plug be placed in the air line between the compressor and the air-receiving tank as a means of avoiding a serious disaster.

"The fusible plug should be filled with a fusible metal which should melt when the temperature of the air in the space in which the plug is located reaches 500 deg. F. The plug should be of such construction as to give warning when the fusible metal melts, and when such warning is given the compressor should be stopped immediately, and a thorough correction made of the dangerous condition.

"The operator should ascertain that the safety valves are in good condition and are tested daily, that proper lubricating oil is used for the compressor, and that each tank is thoroughly drained of all accumulations of oil and water, at least once in each working day."



## When Pulverized, Even Lignite Can Be Satisfactorily Burned\*

Lignites, Especially Those Having Large Ash Content, Are Difficult to Burn on Grates — Pulverizing Provides Not Only for Excellent Burning but for Easy and Accurate Control

BY ROY N. BUELL  
Battle Creek, Mich.

**I**N ORDER to carry California over the period of excessive need of fuel in 1918 the U. S. Fuel Administrator organized a corps of engineers and inspectors to see that every possible source of supply was surveyed and that every pound of oil, coal or wood consumed was burned with a maximum of efficiency. The consumption of fuel oil was exceeding production by over 5,000 bbl. per day, and notwithstanding the fact that many non-essential plants had been entirely cut off, the shortage threatened to become more and more acute as time went on, unless some new source of fuel supply could be discovered.

With a view of finding some practical auxiliary for oil it was decided to make a general state survey of all fuels and among the many possibilities to receive serious attention was California lignite. Large deposits of this material were known to exist in the Priest Valley, in which the Stone Canyon mine is situated; at Corral Hollow, where the Tesla mine is located; near Mount Diablo, at the old Black Diamond mine; in Dos Rios County, which was merely a good prospect, and in Amador County at the Ione coal mine. Experts from the U. S. Bureau of Mines and the technical staff of the State Fuel Administration were sent to examine these properties and report the possibility of using their output as an immediate source of domestic and commercial fuel.

The report submitted by these engineers was thor-

ough and complete, but hardly as reassuring in respect to the available fuel supply as had been anticipated. The Stone Canyon mine, while it contained by far the best coal in the state, could not be put in a workable condition for several months, and then at great expense. The Tesla mine, which has been worked many years before to a depth of about 900 ft. at three different levels, was found to be filled with water to within 300 ft. of the top, and aside from this a large amount of money would be required to replace tracks, elevators, tipples, etc., that had previously been either removed or destroyed. Other small deposits around Livermore, in the Mount Diablo district, were either undeveloped or completely worked out.

In Dos Rios County several test holes were drilled and much preliminary work was accomplished, but no large veins were discovered that would warrant further continuation of the work on a large scale. It was proved, however, that this particular deposit in Dos Rios County was a high grade variety of semi-bituminous coal, equal in B.t.u. content to the Stone Canyon product. Private parties have continued to explore this field and some well-known geologists have ventured the opinion that a large coal deposit will eventually be located.

One of the last mines to be explored was that at Ione, and here the engineers found that coal was actually being mined and that the plant was prepared to turn out about 500 tons per day. In the old days, before the advent of fuel oil and the discovery of bet-

\*Article published under the title "Pulverized Lignite Fuel in California" in *Chemical and Metallurgical Engineering*.

ter coal in Wyoming and Utah, a large portion of the fuel consumed by the locomotives of the Southern Pacific R. R. was obtained from this mine. Many an old locomotive fireman can still be found in California who can tell you many interesting incidents concerning his experience with Ione coal.

After much discussion and careful consideration of the final report submitted by the engineers, the Fuel Administration decided that the lignite from the Ione mine, although of inferior quality, offered the best possibilities for immediate service. The next step was to determine the best method to be pursued in burning the lignite. The consensus of opinion seemed to be that the best efficiency in combustion could be obtained by drying, crushing and afterward burning the lignite in a pulverized state, properly mixed with air.

Among the advantages of burning the lignite in pulverized form, the one that stood out above all others was the fact that no matter how much ash the fuel con-



VIEW WITHIN THE LIGNITE MINE AT IONE, CAL.

tained it could be burned efficiently. Coal and lignites, having a large ash content, are difficult to burn on grates, owing to the fact that as soon as combustion commences the ash collects all around the carbon and completely shuts off the air. Besides this, the high volatile content of the lignite does not thoroughly mix with the air, so that the combustion of the gases is not complete without admitting a large amount of excess air, and even then the efficiency is poor. When the lignite is pulverized, however, the particles are so fine that approximately the proper amount of air to insure complete combustion surrounds each little atom of fuel, which condition not only guarantees high efficiency in the burning but permits of easy and accurate control.

#### TRIAL PLANT ERECTED IN SAN FRANCISCO

To carry on the necessary experimental work preliminary to installing the process in large commercial power plants it was decided to construct a small demonstration plant in San Francisco. Accordingly, a 50-hp. "Kewanee" return-tubular boiler was equipped with the Buell-Santmyer pulverized-coal system, which was considered best to burn the California lignite. Ione

lignite, containing an average moisture of 40 per cent, as mined, was allowed to air-dry for seven days in shallow piles at the top of the mine shaft, when it was shipped to San Francisco, in open cars, for treatment.

As received at the plant, the analysis was as follows:

	Per cent As received	Dry Per cent
Moisture .....	22.44	00.00
Volatile .....	43.37	54.60
Fixed Carbon .....	20.41	26.32
Ash .....	14.78	19.08
	100.00	100.00
B.t.u. per lb.	9,322	12,016

The fuel, as unloaded from the cars, was first crushed to about one-half inch. It was then dried in a semi-direct, artificially fired drier until the moisture content was reduced to approximately 6 per cent. One of the most important operations in the preparation of pulverized lignite is the drying process. At the San Francisco plant about one-sixth of the weight of the raw material was carried off as vaporized moisture, and to accomplish this, 50 lb. of pulverized lignite was consumed as drier fuel to every ton of dried product.

The average temperature maintained inside the drier was 250 deg. F., and great care had to be taken that the heat did not rise above this point, which is apt to cause spontaneous combustion or perhaps explosions. After the lignite had been dried as described, it was pulverized to about 175 mesh, separated by air and stored in a concrete bunker, ready for use.

One of the big bugaboos always brought forward in every argument against the use of pulverized lignite is that it is impossible to keep this material in storage for more than a few days without danger from spontaneous combustion. My experience, however, seems to refute this claim, as I have known of one particular instance in California where several tons of powdered lignite was stored in a metal hopper for six months with apparently no ill effects whatsoever.

The general layout of the combustion equipment used at the San Francisco plant is shown herewith. The pulverized lignite drops by gravity from the bunker into the feeder, where a screw conveyor, driven by a variable speed electric motor, carries the fuel to the mixer chamber. Between the feeder and mixing chamber is situated a cross, with the upper connection left open, through which induced air may be drawn, aiding materially in stabilizing the pressure. An air compressor of the rotary type furnishes the necessary energy to transport the powdered lignite from the mixer to the combustion chamber, and supplies about 40 per cent of the air required for proper combustion, the other 60 per cent being obtained by induction.

The average air pressure employed at this plant was 3 lb. at the compressor and about 12 oz. at the burner. The powdered lignite, after meeting the compressed air at the mixer, is carried along through a 3-in. pipe to the burner, the most sensitive piece of apparatus in the whole plant, although very simple in construction. The focusing sleeve, on the end of the burner, is so arranged that the flame zone can be lengthened or shortened, as desired.

A secondary air line, taken off the main line near the compressor, extends completely through the burner,

with orifices near the extreme end looking back toward the front of the boiler, which acts as a brake on the main body of forced air and lignite. In actual combustion this secondary air brake causes the flame corona within the furnace to expand or contract, as desired. A half-inch steam jet was used to deflect the cutting flame away from the under side of the boiler plates.

The burner was lighted instantaneously with a torch through an opening in the boiler front. These openings were used also to allow more secondary air to enter the combustion chamber if required. About 15 per cent excess air was generally employed in com-

dampers were so adjusted that the vacuum in the rear of the combustion chamber was 0.02 in.

Fifty per cent of the ashes was carried out of the stack in suspension with the waste gases, 3 per cent lodged in the tubes and was removed by the soot blower and 47 per cent dropped either into the ash trap in the rear of the setting or onto the floor of the ash-pit in front. The latter portion of the ash proved upon analysis to be largely silica and to contain about 0.005 per cent unconsumed carbon.

Many tests were carried out at this experimental plant for the benefit of California fuel engineers, and as a result of these successful demonstrations with

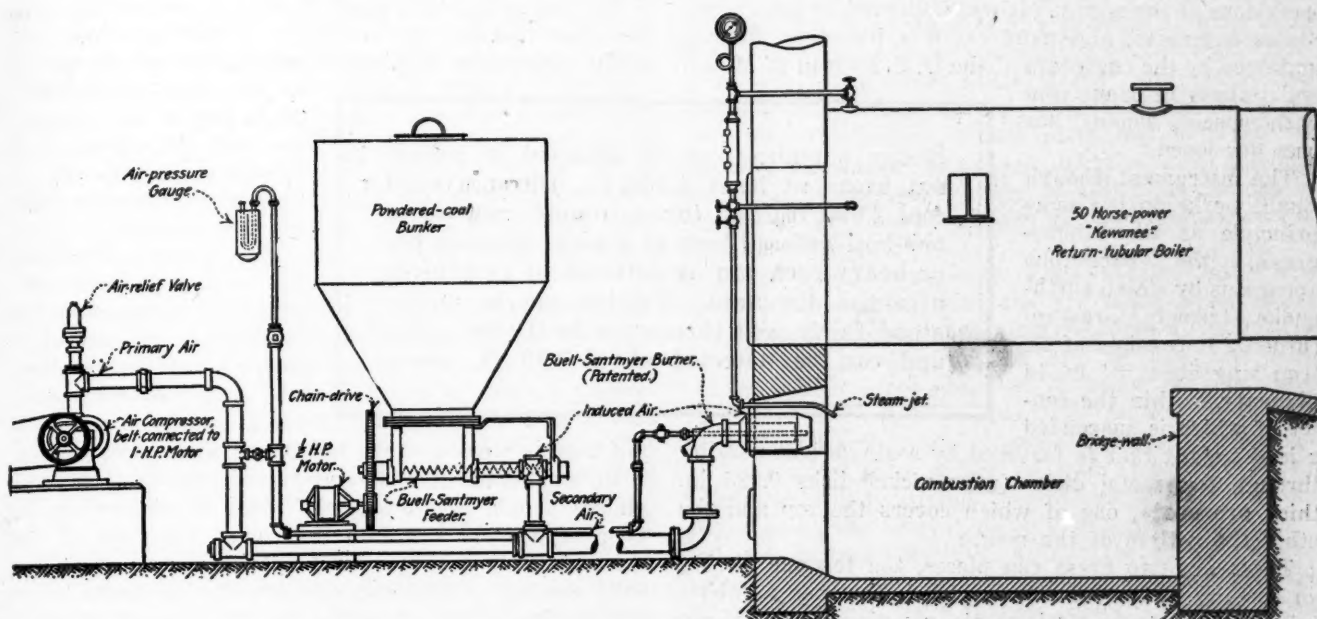


DIAGRAM OF THE EXPERIMENTAL PULVERIZED-LIGNITE PLANT IN SAN FRANCISCO

By burning pulverized lignite under an ordinary horizontal multitubular boiler rated at 50 hp. an evaporation of 9 lb. of steam from and at 212 deg. F. per pound of fuel was secured.

bustion, although when the boiler was under peak load, this amount might be slightly increased. No changes worthy of note were made in the settings of the boiler, the object being to demonstrate how readily this system could be adapted to any ordinary boiler at small expense. The grate bars were removed, and later on an inclined fill was placed in front of the bridge wall to reduce back pressure.

To remove and collect the ash a permanent soot blower was installed in the front end of the tubes and an ash trap constructed under the rear end of the boiler, near the clean-out door. A complete set of instruments was installed to record the temperatures of the feed water, the live steam, the combustion chamber and the waste gases, to determine the vacuum of the stack draft, to weigh the feed water and to measure the steam flow.

Although the conditions for efficiency at the plant were far from ideal, some good results were obtained, both as to combustion and boiler efficiency. The average evaporation per pound of dry fuel burned was 9 lb. of water from and at 212 deg. F. The average temperature in the combustion chamber was around 2,300 deg. F. and that of the waste gases in the breeching above the boiler about 550 deg. F. The CO<sub>2</sub> content in the waste gases averaged 14.5 per cent. The stack

lignite fuel plans were drawn early in 1919 for a large steam electric generating plant at the site of the old Tesla lignite mine and three industrial power plants at Stockton to use lignite from the Lone field. A small plant has been completed at Stockton, where gratifying results have been obtained, the powdered lignite being burned under Heine boilers equipped like those at the initial plants at San Francisco.

When the plants now under construction in California are in actual operation and the efficiency experts have noted the great economy that will result in the generation of steam and for metallurgical purposes as well, the production of California pulverized lignite as an auxiliary to fuel oil and hydro-electric power will have received a great impetus and will without doubt soon take its proper place as a recognized and valuable California industry.

### Postpone Opening of Bids on Army Coal

The War Department announces a postponement of the opening of bids on coal for army requirements during 1921. The proposals provided that bids be opened April 30, 1920. Owing to the car shortage and failure to adjust wages, however, it is deemed advisable to defer opening of bids until May 14, 1920.

# New Uses Found for the Geophone\*

Geophone Is a Small Seismograph—Works Better on the Rib Than on the Roof—Sounds Will Not Travel Along Pipes or Rails if They Are Covered

BY ALAN LEIGHTON

**T**HE GEOPHONE is an instrument invented by the French during the war to detect, through the earth, the sapping and underground mining operations of the enemy. It was improved by the United States engineers, and more recently has been further improved by the engineers of the U. S. Bureau of Mines, and its use in connection with special sounds has been developed.

The instrument, though small, works on the same principle as the seismograph, the ponderous apparatus by which earthquake tremors are recorded. It consists of an iron ring about 3½ in. in diameter, within the center of which is suspended

a lead weight that is fastened by a single bolt passing through two metal disks (pure nickel disks 0.025 in. thick are used), one of which covers the top and the other the bottom of the ring.

There are two brass cap pieces, the top one having an opening in the center to which is fastened a rubber tube leading to a stethoscopic ear-piece. These cap pieces are fastened with bolts to the iron ring and serve also to hold the metal disks in place.

We then have really nothing but a lead weight suspended between two thin disks that extend across a small airtight box. If the instrument is placed on the ground and anyone is pounding or digging in the vicinity, energy is transmitted in wave motion through the earth, and the earth waves shake the geophone case.

The lead weight, on account of its mass and because it is suspended between the disks, remains comparatively motionless. There is thus produced a relative motion between the instrument case and the lead weight. The result is that in the thin space over the disk a compression and rarefaction of the air alternately takes place which is magnified at the small outlet.

Since the rubber tube leading to the stethoscopic ear-piece is connected with this space in the geophone, the vibrations are transmitted to the ear drum and, like other rapid air waves, produce sound effects. Usually two instruments are used, one for each ear.

When the observer is so equipped it is found that the sound is apparently louder from the instrument that is nearer the source of sound, even though the geophones are placed not more than two feet apart. It is evident that by moving the instruments a point can be found where the sound will be of the same apparent intensity in both ears. The direction of the point of origin of the sound is then on a perpendicular to the line connecting the centers of the two instruments,

either in front of or behind the observer. Further observation will show which side. Direction is quite accurately determined in this way.

The sound is not actually louder in one ear than in the other, but the ear is capable of distinguishing the slight differences in time at which the sounds arrive in the two instruments. Since this is the case persons who are slightly deaf in one ear are able to determine direction with the instruments.

The Bureau of Mines has conducted an investigation to determine the conditions of operation under which the geophone will give the best results when used for rescue

and survey work in both metal and coal mines.

In coal mines it has been determined that the geophones should rest on a solid shelf of coal or on the floor of a niche cut into the coal. The floor of the mine is likely to be covered with dirt, and is seldom solid enough to transmit sound well. In metal mines the geophones will, of course, be held against or placed upon the natural rock.

If the geophones are held with the hands against the coal, vibrations are set up by the circulation of the blood within the hands, which greatly interfere with successful observations. On the other hand, rock appears to withstand these vibrations, and successful results can be obtained by simply holding the instruments in place upon the rock.

## AID TO THOSE HOPING TO BE LOCATED

If a man is pounding in the hope that he may be located by means of geophones, he should strike heavy and slow blows upon the coal or rock. The best results are obtained with a sledge or heavy stick of timber. This is true even if the man expects to be located by a party operating upon the surface. There is no advantage in pounding upon the mine roof. The sound transmission is not so good and the process is more fatiguing.

It is of course known that sounds are transmitted clearly along rails and pipe lines. The investigation has shown that while sounds may be transmitted great distances if the rails are laid upon ties or the pipes are suspended, on the other hand if they are buried in loose dirt for even a distance as short as 15 ft. the sound vibrations may be completely damped. For this reason a man should never pound a pipe line or the rails unless he is certain that they are entirely free from any covering. Since the sounds are so well transmitted through rock or coal, pounding on pipes would seldom be advisable.

**Sledge pounding can be detected in mined-out areas at least 1,500 ft., through solid coal 2,000 ft., and through solid rock about one-half mile. Blows of a pick, tamping bar or heavy rock can be detected at two-thirds of those distances. Talking can be understood fairly well through a 50-ft. coal pillar and can be detected about 150 ft. away.**

\*"Observations with the Geophone," from Monthly Reports of Investigations, U. S. Bureau of Mines.

In making observations from the surface above a mine the geophones must be pressed firmly into place upon the earth after the sod has been removed. Experiments were conducted with the geophones placed upon stakes driven into the earth, but this method was found not to possess any advantage.

In regard to the distances that sounds can be detected through the earth, sledge pounding can be heard in a mined-out area of a coal mine at least 1,500 ft., through the solid coal 2,000 ft. and through solid rock about one-half mile. Blows from a pick, tamping bar or heavy rock can be detected about two-thirds as far.

The geophone is of great value for rescue work in mines. It frequently happens that after a disaster men barricade themselves in some portion of the mine where the air is still good and await rescue parties. In such a case if they keep up a continuous pounding it may easily be possible to locate them by means of the geophones. Otherwise it is possible that the rescue party may come near them without discovering their place of refuge. The same is true of metal mines, where men may be imprisoned behind falls or even be barricaded in some portion of the mine to which they have retreated in order to protect themselves from the fumes of a fire.

The geophone also has been proved of value for rough survey work in both coal and metal mines, for purposes of checking, positions of headings, winzes or raises, being driven, sunk or raised to make a connection. It is perhaps of more value under the conditions usually prevailing in metal mines since direction has been found to be more easily determined through rock than through coal.

#### DATA RELIABLE IF STRATA ARE HOMOGENEOUS

It is easily seen that geophones are of value when the headings of tunnels difficult to survey are coming together. Direction determinations should be made from each tunnel, and if the results are consistent the operator can be sure of his data. The results may not agree if the strata between the two tunnel heads are not homogeneous, and of course in this case little reliance can be placed upon them.

That the instruments are of practical value in this connection can be seen from the following instances. The Bureau of Mines engineers were present in a metal mine at the time when a drift and a raise had "missed." A few minutes' observation in the drift and of pounding in the raise showed that the raise had gone up past the drift about 6 ft. in from the face and to the right. Observations made from the raise upon the sounds of the drill operating in the drift showed that the raise extended to a point 6 ft. above the drift and that the drift was in the direction indicated by the first set of observations. A survey showed these conclusions to be correct.

Again, observations were made of another raise which was being driven to the side of a drift, six to eight feet from it. Observations were made of the sounds from the drill, and a point located on the side of the drift behind which the drill in the raise was apparently operating. The survey mark was then ascertained to be from two to three feet to the right of this mark. A drill set up and operated into the survey mark did not hole through into the raise. A hole drilled at the point indicated by the geophones reached the raise, and proved the geophones to be correct within a few inches.

This instance also illustrates another application of the geophone. The surveyors had given the miners the location of the raise with regard to the drift in order to prevent accident in case a blast broke through. The geophone could have located the point easily, and frequent observations, if necessary, would have shown the progress of the work within the raise and before a blast was to be fired.

#### INSTRUMENT REPRODUCES SOUND WELL

One of the advantages of the instrument is that it reproduces sound so well. Talking can be understood fairly well through 50 ft. of solid coal and can be detected 150 ft. away. The sounds from mining machines are all characteristic. In fact, a bureau engineer through 300 ft. of coal was able to name nine out of ten tools which were being operated upon the coal.

In one mine where observations were being made from a tunnel heading the mine foreman heard the workmen in another tunnel preparing to blast, and ordered the bureau engineers to retire until the blast was fired. The sounds were so clear that he did not realize at the time that the tunnel headings were then over 300 ft. apart.

Observations have been made at two mine fires, where it was found that the fire made noise enough to be heard some distance, either because of its drawing air or the breaking off of bits of coal and slate. At one fire burning about 40 ft. below the surface all of these sounds could be heard, and an area was located within which they were audible. The fire could not be approached from within the mine, but the one point inside at which similar sounds could be heard was found to be the nearest point to the fire area.

Later observations made around the base of a large burning culm pile were of interest because the same kinds of sounds were audible there. At the second fire, which was burning 300 ft. below the surface, only the sounds from dropping rock could be heard.

It is the custom in some localities to put down churn-drill holes from the surface to ventilate blind stopes and to carry pipe lines. These holes often come down in the solid, and much expense is incurred in locating them and driving tunnels to them. Geophones will be of great value here, and there would be no question of faintness of sound as churn-drilling can be detected nearly a mile away.

#### MAY REVEAL COURSE OF DIAMOND DRILLS

It is a well known fact that when the bit of a diamond drill has drilled a considerable distance below the surface there is no simple method for determining the course it may have taken, although there are survey methods used that give approximate results. As these bits nearly always drift away from a straight course, it is evident that any instrument making it easily possible to determine their course will be valuable. There is some possibility that the geophone may be useful for this purpose. To date, however, this possible use of the geophone has not been thoroughly studied.

Observations have been made upon but two vertical drill holes. These holes, about a quarter of a mile apart, were penetrating strata consisting of alternate layers of gneiss and "black rock," pitching at an angle of approximately 45 deg. One hole has reached a depth of approximately 1,000 ft., the other 600 ft. At each hole it was found possible to hear the bits cutting when the geophones were placed upon the rock surface.

The observations were somewhat disappointing in that the sound of the bits could be heard within but a limited area, a circle whose radius was approximately 100 ft., with its center at the drill. Since the area was so small, and presumably directly above the bit, no direction determinations could be made in the usual manner. It is believed, however, that had the bit drifted this area of audibility would have been directly above the bit and away from the drilling machinery. Observations must be made on inclined holes in order to prove this point. It is certain that should a drill-hole be put down ahead of mine workings there would be no difficulty in locating it from the workings.

Very satisfactory results have been obtained also in attempts made to locate leaks in water mains. The water circulating in the ordinary city main can be heard with the geophones when they are placed on the surface, 10 to 12 ft. above the pipe. In the business district of Pittsburgh one leak was located within a few minutes although the water department had been trying to find it for two weeks. The leak could be heard from the surface from any point within a circle 60 ft. in diameter, and was located in the joint of a "T" connecting a 10-in. with a 15-in. main. The geophones were also used successfully to locate a leak in a one-inch pipe serving a residence.

## Who Can Beat This Sinking Record?

Illinois Shaft 263 Ft. Deep Is Completed  
and Timbered by the Johnson City  
Coal Co. in 35 Days

**T**HIRTY-FIVE days for the complete sinking and timbering a 263-ft. shaft is a recent achievement of the Johnson City Coal Co., at its No. 2 mine at Johnson City, Ill. The speed and economy attained is believed by those who did the sinking to be a record for the state. A description of the work and method of procedure are therefore here given.

The shaft is 10 ft. 6 in. x 15 ft. 6 in. inside and is divided into two compartments. Of these the manway is 4 ft. wide and the air shaft proper is 11 ft. wide. A 6-in. wall is placed between these compartments.

A concrete lining extends down the shaft for a distance of 22 ft. from the surface and rests upon solid rock. This lining is 12 in. thick and is reinforced vertically with  $\frac{1}{2}$  in. rods on 12-in. centers and horizontally on 8-in. centers. The foot of the shaft also is concrete lined for a distance of 30 ft. upward from the top of the coal bed. Footing is made upon the limestone underlying the coal. The lining here also is 12 in. thick and is reinforced in exactly the same way as the lining at the top.

The shaft timbers are 6 x 6 in. long leaf yellow pine treated with carbolineum. Bearing sets are 12 x 12 in. yellow pine resting on a 5-in. ledge of rock throughout their entire length and set into the rock for 2 ft. at their ends. The partition between the manway and air shaft is of 4-in. yellow pine extending between 4 x 6-in. wall plates. The shaft walls between top and bottom concrete linings are covered with expanded metal lath upon which has been placed 2 in. of gunite.

On Aug. 5, 1919, surveys were made to locate the top and bottom of the shaft, the transference of tools and equipment to the shaft site was begun and work on the headframe, the setting of the hoisting engine and the

laying of the steam line was started. On Aug. 16, 1919, shaft sinking was commenced and three shifts per day were kept at work continuously thereafter. Work was also begun from underground in driving the shaft upward, a few men being kept steadily at this work. This upward driving finally attained a height of 60 ft.

On Sept. 17 the two portions of the shaft (upper and lower) were joined by sump shots in the upper section. On Sept. 20 the two places were completely connected and timbered. The total distance sunk was 263 ft. and the time consumed was 35 days.

The manway is now completed and equipped with a steel stairway in compliance with the Illinois state law. It should be noted also that in spite of the speed attained in sinking this shaft not a man was injured throughout the entire operation.

The work of sinking and completing the shaft was in charge of J. L. S. Dowell of De Soto, Ill., while the engineering work was done under the direction of Willard J. Reintjes, chief engineer of the Johnson City Coal Co.

## Coal Shortage Halts German Industries

**I**NSUFFICIENT coal supply is greatly hampering the rejuvenation of Germany's industries that was expected to follow the cessation of hostilities. All the largest cement works have been closed for some time. The iron industry suffers above all, on account of the entire lack of grade coke and coal. Particularly bad are the conditions at Schweinfurt.

The glass industry, because of the insufficient supply of coal from Bohemia, has been forced to close its works for the greater part of a month, and the ceramic industry will come to a complete standstill if the Bohemian coal does not arrive soon. The situation of the textile industry at Hof likewise is very bad.

It is due only to the comparatively mild winter weather that the adverse conditions as regards the coal supply for heating purposes have been less felt. In Munich the conditions have become very much worse in this respect. The Bavarian State Government, according to the *Muenchener Zeitung*, is giving this question of the coal supply its most careful attention, and is endeavoring, with all the means at its disposal, to meet the situation.

One must not believe, however, that the conditions above noted prevail only in Bavaria. Discouraging reports are coming from all parts of Germany. In the Rhineland and Westphalia the heavy industries are, in a large measure, at a standstill; even such works as formerly depended upon their own coal mines for their requirements. In Hamburg the fishing steamers are ready to put to sea, but cannot do so because they have no bunker coal. Similar conditions prevail in the nitrogen and potash industries, whose products are particularly necessary in agriculture.

In Westphalia the following factories, whose products are of especial importance to the mining industry, have been obliged to close for lack of coal: Westphalia Explosive Co., in Sinsen, since Jan. 10; Schlebusch Dynamite Factory, since Jan. 12; Witten Cast Steel Works, which manufactures hauling cables for mining purposes, and Jacoby Rolling Mill, since Dec. 1, 1919.

If this stoppage of work is not speedily checked by an increased supply of coal, it is only a question of time when the working of the mines themselves must cease for want of operating materials.

# COAL AGE

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## Operators Lose Fight on Assigned Cars

RAILROAD fuel supply has been cut by the Interstate Commerce Commission as a Gordian knot in its order of April 16, re-establishing assigned cars. For weeks the National Coal Association has been struggling with the problem of giving railroads the coal they need and will take, whether or no, without giving in on the question of assigned cars. The fight which began, with the support of Mr. Garfield, in 1918, has been carried on past the period of government control. But a few weeks ago it appeared that the operators would be able to develop sufficient co-operation among themselves to give the railroads the protection they require. The action of the Interstate Commerce Commission in setting aside a rule of two years' standing in order to permit the carriers to buy their fuel coal with cars must be due to pressure from the roads themselves.

Technically the operators have lost, but it remains to be seen whether they have not after all achieved more than they realize. It will be good policy for the roads to use their regained power with care, avoiding the abuses of the past, for the operators no doubt will renew their pressure for equal running time for all mines at the first opportunity.

## Why Costs Are Higher

A STRIKING point demonstrated by the figures of the Federal Trade Commission for January, 1920, on the operation of coal mines reported this week in our Washington correspondence is the relationship between the rate of production and the f.o.b. mine costs. It is clear from the comparisons set forth in this first monthly summary that the decreased rate of coal production has been an important factor in this matter and in part has been the cause of an alarming decrease in the so-called "margin per ton" from which the operators are expected to get their profits as well as return upon the investments.

From the report we are led to conclude that the cost to the operators of the 14 per cent wage increase was about 25 cents per ton on the average. This figure is about what would be expected from the fact that the labor item is in total \$1.49 for 1918. The costs reported for supplies and general expenses and the sales realization for January do not differ materially from the results of the year 1918, during much of which the same government prices were in vogue as in January. As a consequence the margin per ton is about the same or decidedly smaller in all districts except the Rocky Mountain field, where a bare 10 per cent increase is noted.

On the average of all the territory covered the margin is 42 cents per ton. Those who have looked

for the reason of the increases in price that followed the removal of Government restriction April 1 can look at this low figure for their answer.

The influence of the lowered rate of output in some mines on the increase in costs is shown in these figures. On the average there is an increase of 23 cents per ton, which is, it happens, exactly the figure found for the group of plants which report within 5 per cent of the same rate of production for the month as their average for 1918. Other plants with increases in rate of production show somewhat smaller increases in cost, as would be expected as the result of the possibilities of greater efficiency at greater rates of output. When the rate of output is 25 per cent or more below that of 1918 we find a tremendous increase in costs, which is reported as \$1.17 per ton for this group. The penalty of low production is thus most strikingly set forth.

Such cost studies cannot be other than interesting and valuable. We lose them almost as soon as they start, for the Federal Trade Commission has been enjoined their further collection.

## Inquisitors Curbed

THE decision rendered by Justice Bailey of the District of Columbia Supreme Court grants a temporary injunction which restrains the Federal Trade Commission from requiring monthly reports of costs of production from the coal operators. It thus in the very first round registers victory for the National Coal Association. A permanent injunction is yet to be sought and finally the Supreme Court will be called upon to pass judgment. It is expected that in the course of two or three months the permanent injunction will issue, the Federal Trade Commission preferring to renew its fight before the court of last resort.

It is more than significant that Justice Bailey based his decision on constitutional grounds. He appears to differentiate between the producing of coal and its selling and shipping, and holds that producing is always intrastate business and therefore not subject to such investigation by the Government as has been attempted by the Federal Trade Commission. Such an opinion, if sustained, will seriously curtail the activities of the commission, which result, of course, is just what the coal operators desire.

What is more noteworthy perhaps is the change of heart on the part of the coal industry made evident by its purpose to trim the wings of the commission. But a few short years ago, when Edward Hurley was chairman of the Federal Trade Commission, the mine operators met with open arms his propaganda on cost accounting and as late as 1916 the operators willingly gave these same monthly cost reports to the commission.

The fall from grace can be blamed on none other than the Federal Trade Commission itself. This government body, first a star of hope, is now in sad disfavor with American business generally. In this particular instance the coal industry does not so much object to being singled out for investigation of costs and profits as to the arbitrary manner in which it has been ordered about and to the doubt whether it will receive fair treatment afterward, a distrust bred of experience with the publicity given by the commission to its previous cost investigations.

## Wrong Time to Urge Storage

THE COUNCIL of National Defense recently issued a statement, which is reprinted elsewhere in this issue, severely criticizing the bituminous coal operators for recent increases in prices. Comment on this utterance seems called for. In the first place we doubt much that the Council of Defense has actual evidence that prices have made any considerable advance. The Attorney General issued a broadcast warning, but he has accused no one in particular. Here and there, it is true, operators and jobbers are asking, and consumers are offering, absurdly high prices for special grades of coal or for exceedingly prompt delivery, but it is more than doubtful whether the practice is general.

But these relatively few cases must be singled out from the general advance in price made on April 1 to offset the wage increase of 27 per cent. Based entirely on that advance, costs of production were augmented about 20 per cent over those current last year, and no one has any right to expect the coal operators to absorb all or any part of this increase in production costs.

So long as the operator does not have the right to discuss prices the producer who would be reasonable has no control over those operators who are disposed to call for and accept all the market will stand. In one Eastern field a policy has been adopted of preventing the spread of news or gossip about "\$5 coal" on the theory that if such a story spreads many will be incited by example to boost prices unduly.

It will be remembered that the Bituminous Coal Commission urged a "buy-early" campaign. Mr. Shenton now says that he meant that consumers should not buy until May 15, the date on which he concludes prices will go down of their own accord. Some *attachés* of the commission, Mr. Reynolds in particular, were so enamoured of the "buy-early-and-store" plan that they tried to get the coal operators behind it.

The National Coal Association, having tried it last summer, when the market was poor, is wise enough to keep hands off this spring, when demand is at a peak. The Council of Defense, in urging buying, seriously erred in its judgment of conditions and now apparently does not wish to be held to blame for any rise in prices that may well be charged to that unfortunate advice.

## Portage Protests

A COAL OPERATOR in Portage protests against the editorial entitled "What Other Earnings Do Miners Make?" that appeared in *Coal Age* some little while back. He objected to the statement that mine workers worked on farms and elsewhere during idle periods.

Probably he is not the only one who felt in the same way about the matter. There are some sections, of course, where the mine workers do not farm when their mines are idle, and operators in those sections who care more for the truth than for winning the strike—and many of them really do though they get little credit for it—are apt to think that the editorial exaggerated, if it did not misrepresent, the facts.

However, it is true that there are many localities, especially those in which mining is a newly entered craft and where the operation is mainly by American-born citizens—whether intelligent citizens or mere "sagers"—where there is a disposition to leave mining for the plow. In some sections the men are sons of

farmers who were bred on the farm and have relatives still cultivating the soil. This may not be true of Portage, and it cannot be asserted of foreigners whose failure to understand English makes them undesirable farm operatives, for on the farm they cannot be placed under immediate supervision, and furthermore they cannot be paid on the basis of the work they actually perform.

But it is true that mine workers do quite a little farming in many of the central Pennsylvania fields. Mines in such regions have frequent strikes in the summer. The men like to strike, for then they can go a-harvesting and sometimes draw strike pay besides. One year an operator near Foxburg, Pa., shut down his mine altogether because the men were constantly laying off for one excuse and another, the real animating cause being a desire to help the Brousiuses and Kellers gather in the grain or hoe the corn.

At another mine a strike lasted for months, the dispute having a clearly defined day for settlement—namely, Harvest Home. Many a strike has a direct connection with the twin occupation of mining—namely, farming. The fields stretch down almost to the mine mouth and on an idle day the men are up and away fixing their fences, building a pen for the hog or scalding him in the yard, plowing, seeding and doing other chores at home or in the house of a relative, a friend or a neighbor.

## "Doughnut" Picking Tables

WE PRINT on page 791 of this issue a description of the surface works at Nanty Glo, Pa. To many coal operators more than ordinary interest attaches to the preparation appliances here installed. Here for the first time revolving circular, annular, ring-shaped or what might from their form be termed "doughnut" picking tables have been tried.

A revolving doughnut-picking table unquestionably possesses some interesting possibilities. In the first place the construction is extremely simple. The plate ring, suitably stiffened and reinforced with structural shapes, is supported upon double-flanged wheels and is driven through a large segmented level gear and pinion from a motor. Thus with the table set level the only power required for driving will be that necessary to overcome friction and that consumed in removing the coal from the table platform.

This type of picking table, aside from the motor and gearing that drives it, has in its simplest form a minimum of moving parts, these being confined to the bed and the requisite supporting rollers. The simplicity of construction is immediately apparent.

On the other hand, this type of table requires a somewhat different arrangement and shape of picking room than does the ordinary apron. Naturally the building must be wider in order to accommodate the circular table. Obviously also the picking room need not be as long as would be necessary for the installation of a traveling apron.

For loading the larger sizes of prepared coal from such picking tables as these either the traveling-apron loading boom or the shaking chute could doubtless be used to advantage. In all probability either of these devices might be so arranged as to give only a small drop and consequently a minimum of degradation.

# Secretary Payne Denies Government Liability for Diversion of Coal

In Letter to the Graff Mining Co. Secretary of the Interior Cites Opinion of Attorney General That the United States Is Not Liable to Pay for Diverted Fuel

**A**N important opinion in connection with the adjudication of claims against the Fuel Administration has been expressed by the Secretary of the Interior in a letter to the Graff Mining Co. at Blairsville, Pa. In a letter dated April 14, Secretary Payne says:

"Your letter of March 20, 1920, addressed to the Bureau of Adjustments, Fuel Administration, Washington, D. C., has been referred to this department for consideration.

"It relates to your claim in the amount of \$151.93, for a car of coal, C. & O. No. 55,545, shipped on Sept. 28, 1918, to the American Mills Co., Waterbury, Conn., and diverted by order of the U. S. Fuel Administrator for the State of Connecticut to the Barnum-Richardson Co. of East Canaan, Conn., which is now in the hands of a receiver. You state that on Feb. 14 you received a check for \$6.44 from the receiver in full payment for this car, and that you refused to accept it.

"The records show that you were in correspondence with the Fuel Administration with respect to this claim, and that on May 13, 1919, you were advised that nothing could be done for you in the matter, pending further advice from the Department of Justice, and that the Fuel Administration had no funds which could be legally disbursed for the payment of such claims.

## CONSUMER IS LIABLE FOR PAYMENT

"All shipments of coal, whether f.o.b. mines or otherwise, and all shipments of coke f.o.b. ovens or at place of storage or otherwise shall be made subject to the diversion of such coal or coke by the U. S. Fuel Administrator or any persons acting under his authority, to any persons or consumers, and for any of the purposes heretofore or hereafter authorized by him. The title of the purchaser, consignee or consumer, in the case of any such shipments of coal or coke, which by custom or law might become vested at the time and place of such shipment, shall from and after the effective date hereof be subject to the condition that the coal or coke so shipped may be diverted as aforesaid, and that in case of any such diversion, the title and interest of such purchaser, consignee or consumer with respect to any coal or coke so diverted shall be completely divested and terminated and his liability to pay therefor shall cease.

"The person or consumer to whom any such coal or coke is diverted shall become liable as of the time of such diversion to pay to the shipper thereof the price in force at the date of shipment as fixed therefor by or under authority of the President of the United States, plus transportation charges thereon and plus a handling charge of 15c. a net ton to cover costs of rebilling, collection and replacement. If such handling charge is made, no jobber's commission shall be added to the mine's price. If the coal or coke so diverted was shipped under a valid and enforceable contract, the quantity thereof so diverted shall not be charged against the amount to which the contract applied.

"The Fuel Administration is no longer in existence and by Executive order of March 20, 1920, the Secretary of the Interior was authorized and directed to adjust, liquidate and pay claims against the Administration. Under this order the authority of the Secretary of the Interior is limited to the allowance of claims for which the United States is legally liable, and for which appropriations have been provided by Congress. No such appropriations have been made for losses arising from the diversion of coal under the orders of the Fuel Administration, and the Attorney General has rendered an opinion that in cases of this character the United States is under no legal liability to pay for the coal.

## DEPARTMENT HAS NO AUTHORITY OR FUNDS

"From the foregoing you will see that this department is without legal authority or funds to adjudicate or pay your claim. Authority to so adjudicate and pay can only be had by act of Congress."

In connection with the letter to the Graff Mining Co. the ruling of the Attorney General on this subject is of interest. In a letter to the Fuel Administration dated June 6, 1919, the Attorney General says:

"This will acknowledge receipt of your letter of May 29, relative to the liability of the United States for coal diverted by order of the Federal Fuel Administration.

"The only question discussed in your letter which seems to require answer is what course should be taken in those cases in which bankruptcy or other judicial proceedings are known to be pending against the person to whom the coal was diverted. This involves the question of the liability of the Government for coal diverted by order of the Fuel Administration under Publication No. 14 of Jan. 14, 1918. This publication is as follows:

"This was issued, as we understand, pursuant to the first paragraph of Section 25 of the Food and Fuel Control Act, which confers upon the President authority to establish rules for the regulation of and to regulate the method of production, sale, shipment, distribution, apportionment or storage of coal.

"By this regulation it is apparent that the Government assumed no liability for the purchase price of the coal but was merely acting as an agency to secure the proper distribution as between consumers.

"As this was a valid regulation the liability of the Government must be measured by its terms. It being clear from the terms of the regulation that there is no liability assumed by the Government, we think none arises.

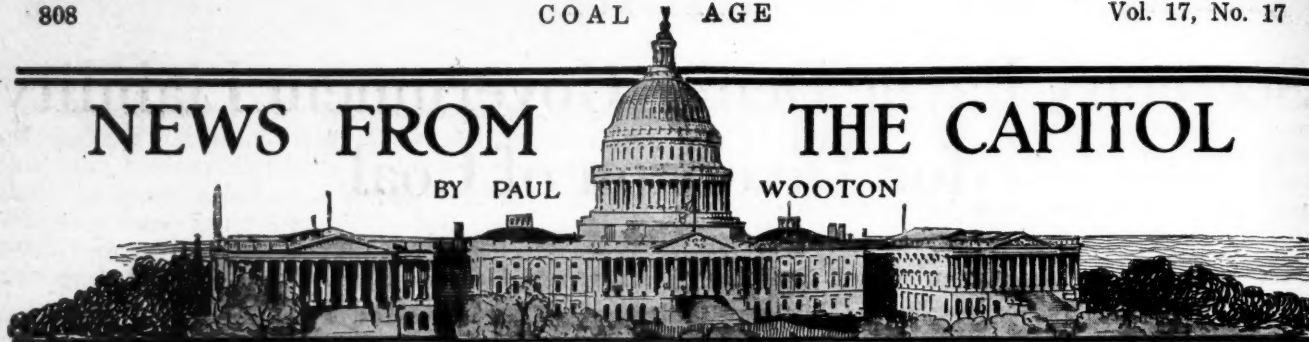
"If the regulation is beyond the power of the Fuel Administration, it, of course, could not impose any liability upon the Government; and we therefore suggest that in the cases under consideration you should deny the existence of any legal liability."

## NEWS FROM

## THE CAPITOL

BY PAUL

WOOTON



## Commission Authorizes Assigned Cars

**A**SSIGNED cars became a reality again on April 16, when the Interstate Commerce Commission issued the following notice:

"The supply of cars available for the transportation of coal continues insufficient to meet the demand. In view of the cessation of Government control of coal production and distribution, effective April 1, 1920, and in order that railroad fuel requirements may be reasonably met without the necessity of carriers resorting to confiscation of commercial coal, it becomes necessary to amend our notice to carriers and shippers dated March 2, 1920, and our recommendation therein to read as follows:

The Commission recommends that until experience and careful study demonstrate that other rules will be more effective and beneficial, the uniform rules as contained in the Railroad Administration's Car Service Section Circular CS 31 (revised) be continued in effect, except that rule 8 as contained in said circular should be amended to read:

8. Private cars and cars placed for railroad fuel loading in accordance with the decisions of the Interstate Commerce Commission in *R.R. Com. of Ohio, et al., v. H. V. Ry. Co.*, 12 I.C.C. 398, and *Traer v. Chicago & Alton R.R. Co., et al.*, 13 I.C.C. 451, will be designated as "assigned" cars. All other cars will be designated as "unassigned" cars.

"The commission is of opinion that an emergency exists requiring immediate action, and in exercise of the authority conferred by paragraph 15 of Section 1 of the Interstate Commerce Act, as amended by Section 402 of the Transportation Act, 1920, hereby suspends the operation of the existing rule 8 and directs the observance by all carriers by railroad subject to the Interstate Commerce Act of rule 8 modified as above, effective April 16, 1920, and until the further direction or order of the commission."

## Federal Trade Commission Begins Series of Monthly Coal Costs

Returns of Operators Taken, Without Revision of Figures, Accentuate Increased Production Cost

**V**ARIOUS statistical deductions compiled from the monthly reports made to the Federal Trade Commission by bituminous coal operators appeared under date of April 20 in bulletin form, issued by the commission. This bulletin is to appear monthly in the future. In addition, final and more comprehensive figures will be issued quarterly. In bringing out its first bulletin the Trade Commission states its object is to "make public the essential facts concerning changes of cost with the least possible delay."

The commission calls attention to the fact that the figures are taken from the operators' returns, without having been subjected to any critical analysis or revision.

It was stated, however, that the experience of the commission indicates that the revision will reduce by not more than a few cents per ton the costs claimed.

An interesting portion of the report is as follows:

The average increase here shown for the United States for January, 1920, was 23c. per ton, or an average increase of 11 per cent over the 1918 total f.o.b. mine cost. This increase is attributable to two chief causes: (1) The higher wage scale put into effect November, 1919, as a result of the Fuel Administrator's recommendation of 14 per cent increase in the wages of mining labor, and (2) the small decrease in the January, 1920, output from the average monthly output of 1918. The changes in the supplies and general expense costs were of minor importance.

The great diversity in mining conditions between the different districts, both in regard to thicknesses of seam mined and the relative use of machinery in mining the coal, caused the wage increase to affect to a different degree the labor costs of the various districts. In the Federal Trade Commission's coal cost reports for 1918 much detailed information on these diverse conditions is available.

To throw light on the effect which a diminished production has in increasing the costs, the following tabulation for 1,272 operators has been carefully made. Taking their average monthly production in 1918 as a base, they have been grouped according to the relative decrease or increase of their production in January, 1920; and their total f.o.b. mine cost increases are thus shown in relation to changes in production. A 14 per cent increase (the Garfield recommendation) over the wage scale in effect throughout 1918 was made in November, 1919, and was in general effect during January, 1920.

DISTRIBUTION OF TOTAL F.O.B. MINE COST INCREASES ACCORDING TO CHANGES IN PRODUCTION TONNAGE OF 1,272 OPERATORS, JANUARY, 1920, FROM AVERAGE MONTHLY PRODUCTION, 1918

Change of January, 1920, Production from 1918 Average Monthly Production	No. of Operators	Production January, 1920 Tons	Increase of Jan., 1920, Claimed Cost Over 1918 Annual Claimed F.O.B. Mine Cost	Per Cent
Decrease over 25 per cent.....	3	8,114	\$1.17	33
Decrease 16-25 per cent.....	132	2,270,419	.29	15
Decrease 6-15 per cent.....	410	7,374,005	.28	14
Decrease 0-5 per cent.....				
Increase 0-5 per cent.....	312	4,546,242	.23	10
Increase 6-15 per cent.....	210	2,784,344	.19	9
Increase 16-25 per cent.....	127	2,651,976	.15	7
Increase over 25 per cent.....	78	996,127	.12	5
Total.....	1,272	20,631,227	\$0.23	11

As far as can be judged, therefore, from the returns at present available, the increased cost attributable to the increased wage scale is about 23 cents per ton, or 10 per cent (the increased cost shown in above table for the group where production changed least—5 per cent or less—and where the effect of the wage agreement is consequently best seen). For the total—1,272 operators—the average decrease in tonnage was 2 per cent and their average increase in cost 23 cents per ton, or 11 per cent. This increase of about 23 cents per ton, or 11 per cent, was the result in January, 1920, of the "Garfield" 14 per cent wage increase, which it should be noted is about one-half of the total increase (27 per cent) recently recommended by the United States Bituminous Coal Commission.

The figures of the Trade Commission accentuate the influence of increased production on costs. For instance, there were 86 operators in eleven districts whose increase in production was so great as to more than absorb the wage increase. Their costs in January, 1920, were lower. The figures cannot be regarded as typical because the amount mined was less than 750,000 tons. These instances were as follows:

Field	Operators	Tonnage
No. 1, Ohio.....	3	10,920
No. 3, Ohio.....	16	84,336
Pittsburgh seam, W. Va.....	8	150,616
No. 2, Ohio.....	14	47,770
3a, Ohio.....	5	16,375
No. 7, Ohio.....	6	49,519
No. 2, Illinois.....	21	219,361
Michigan.....	4	73,398
M-M-P, Iowa.....	4	73,036
Ex-Logan, Arkansas.....	3	5,020
Anthracite, Arkansas.....	2	5,635
Total.....	86	735,986

# Federal Trade Commission's Cost Order Held Unconstitutional

Decision of Justice Bailey of District Supreme Court Sets Aside on Constitutional Grounds  
the Right of Government to Compel Coal Operators to Make Cost Reports—  
Federal Trade Commission Will Appeal to Supreme Court.

**J**USTICE Bailey, in the Supreme Court of the District of Columbia, in a decision handed down April 19, in the case of Maynard Coal Company against the Federal Trade Commission, held that the Commission had no authority to require from coal operators reports concerning cost of production, amount of tonnage, and financial condition as prescribed by the order of the Federal Trade Commission and the accompanying form of reports and detailed instructions which were sent coal operators throughout the country in January of this year.

In this litigation, which was instituted by the National Coal Association as a test case about a month ago, it was contended by the Federal Trade Commission that they had the power to require such detailed reports concerning all of the business of any coal operator—both that portion of its business which had to do with the mining of coal and its intrastate shipments as well as its interstate shipments, provided such coal company shipped any portion of its coal to points in States other than the State of its production.

## DECISION HAS FAR-REACHING EFFECT

If the contention of the Commission had been sustained it would have necessarily followed that the Commission had the right to require such detailed reports not only from coal operators but from all manufacturing and commercial concerns throughout the country which ship any portion of their product in interstate commerce. Justice Bailey's decision affects the interests of practically every mining, manufacturing and commercial house in the United States.

In this decision Justice Bailey held that the effect of the Commission's order would be to force the coal operators to change their bookkeeping methods and to report in detail not merely concerning their interstate commerce transactions but concerning their intrastate sales as well, and their purely intrastate business of producing coal. Justice Bailey held that it was beyond the power of the Commission to require reports of that character, and that it was beyond the power of Congress to authorize the Commission to require such reports.

He held that under the commerce clause of the Constitution of the United States, Congress might authorize the Commission to require such reports with reference to the interstate business of the coal operators and that the Federal Trade Commission Act must be construed as limiting the power of the Commission in this regard to such interstate commerce transactions in order to render it constitutional. In this opinion he said: "And the information required in this case is such as would apply as well to a corporation whose business was wholly intrastate as to the plaintiff—that defendant unquestionably is demanding information as

to intrastate commerce and as to coal production, and frankly asserts the right to do so."

He then asserts: "That there is radical distinction between production and commerce is clear," and cites in support of this proposition a long line of decisions of the Supreme Court of the United States: "In order for the Federal Trade Commission to have the power to require the plaintiff to make reports as to the mining of coal and as to its intrastate shipments, it must appear that this information is necessary to or connected with some object over which the general Government has power. There is no claim made that there is any proceeding pending involving the Anti-Trust Act or unfair methods of competition, or under the Clayton Act, but in its order defendant demands reports in all the business of the plaintiff."

In concluding that portion of his opinion dealing with the fundamental constitutional questions involved Justice Bailey said: "But did Congress undertake to vest such power in the Commission? It is the duty of the courts, if possible, to give the statute a construction which would not conflict with the Constitution. The corporations referred to in the Act are, by its terms, limited to those engaged in 'commerce' as defined in the Act, and all the powers vested in the Commission should be and it seems may be construed with this limitation. *But the Commission has undertaken to construe the Act otherwise, and to take steps under its construction of the Act to require information and reports not relating to interstate commerce, but relating chiefly or wholly to production, and under its order the information which it has the power to demand cannot be separated from that over which it has no control.* While as to other matters Congress may authorize the Commission to obtain information upon any subject which in its judgement it may be important for it to possess, it may not *compel* the production of such information in respect to matters over which the Federal Government has no control."

## NO DECISION ON TRANSFER OF POWER

With reference to the contention made on the part of the plaintiff that any powers that the Federal Trade Commission may have at any time possessed to require reports from coal operators was transferred to the Fuel Administration by the Executive order of the President of July 3, 1918, made under the provisions of the Overman Act, Justice Bailey said that it was unnecessary for him to pass upon that question in view of his conclusion as to the lack of power on the part of the Commission.

Justice Bailey held that a temporary injunction should issue in accordance with the prayer of the bill, and such order is now being drafted by counsel and will shortly be submitted to the Court for entry.

## Text of Injunction Decision Against Trade Commission

**T**HIS is an application for an injunction to restrain the Federal Trade Commission from taking steps to collect a penalty for failure on the part of the plaintiff, The Maynard Coal Company, to make certain reports called for by the Commission. The bill is supported by several affidavits of expert accountants. The defendant Commission has filed its answer, but on account of insufficient verification, it cannot be treated as an affidavit. It has also filed with its answer several affidavits, which will be noticed hereafter.

The plaintiff is a corporation engaged in the mining, production and sale of bituminous coal. It owns and operates mines in Kentucky and Ohio. Practically all of the coal mined in Kentucky and about one-half of the coal mined in Ohio is shipped to points without those states, and the remainder of that mined in Ohio to points in that state.

On Jan. 31, 1920, the defendant Commission served upon a large number of coal mining corporations, including the plaintiff, an order requiring them to report "monthly cost of production and other data," as set out in specification accompanying the order, for each calendar month of the year 1920 and until further notice. The information and reports required are very full and detailed as to production, sales, management, financial condition, depreciation, etc., and all to be calculated as prescribed in the specifications. The plaintiff claims, and from the affidavits filed such appears to be the fact, these reports cannot be made without a large change in the plaintiff's method of bookkeeping and accounting, and at a very considerable expense.

The Commission claims that it may require these reports under the authority placed in it by the Act of Congress creating the Commission approved Sept. 26, 1914, and that Congress has the authority to so empower the defendant under the clause, known as the Commerce Clause of the Constitution of the United States.

"Congress shall have power \* \* \* \* to regulate commerce with foreign nations and among the several states with the Indian Tribes."

The part of the Federal Trade Commission Act pertinent to this inquiry are substantially as follows:

Commerce is defined, Section 4, as "commerce among the several states or with foreign nations, or in any Territory of the United States or with foreign nations, or between any such territory and another, or between any such territory and any state or foreign nation, or between the District of Columbia and any state or territory or foreign nation."

Section 5 provides that unfair methods of competition in commerce shall be unlawful, and empowers the Commission to take steps to prevent such unfair methods and prescribes the procedure for carrying out such purpose.

Section 6 of the Act provides: "That the Commission shall have power—

a. To gather and compile information concerning, and to investigate from time to time the organization, business, conduct, practices, and management of any corporation engaged in commerce, excepting banks and common carriers subject to the Act to regulate commerce, and its relations to other corporations and to individuals, associations, and partnerships.

b. To require, by general or special orders, corporations engaged in commerce, excepting banks, and common carriers subject to the Act, to regulate commerce, or any class of them, or any of them, respectively, to file with the Commission in such forms as the Commission may prescribe annual or special, or both annual and special, reports or answers in writing to specific questions, furnishing to the Commission such information as it may require as to the organization, business, conduct, practices, management, and relation to other corporations, partnerships, and individuals of the respective corporations filing such reports or answers in writing. Such reports and answers shall be made under oath, or otherwise, as the Commission may prescribe, and shall be filed with the Commission within such reasonable time as the Commission may prescribe, unless additional time be granted in any case by the Commission."

Subsection c authorizes the Commission, when a final decree has been entered against a corporation under the Anti-Trust Acts, to investigate the manner in which the decree is being carried out.

Subsection d authorizes the Commission upon direction of the President of either House of Congress to investigate alleged violations of the Anti-Trust Acts.

f. "To make public from time to time such portions of the information obtained by it hereunder, except trade secrets and names of customers, as it shall deem expedient in the public interest; and to make annual and special reports to the Congress

and to submit therewith recommendations for additional legislation; and to provide for the publication of its reports and decisions in such form and manner as may be best for public information and use."

g. "From time to time to classify corporations and to make rules and regulations for the purpose of carrying out the provisions of this Act."

h. "To investigate, from time to time, trade conditions in and with foreign countries where associations, combinations or practices of manufacturers, merchants, or traders, or other conditions, may affect the foreign trade of the United States, and to report to Congress thereon, with such recommendations as it deems advisable."

The defendant in its answer admits "that no complaint had been filed by or before it charging the plaintiff with unfair methods of competition or with the violation of the Federal Trade Commission Act or the Anti-Trust Acts and admits that the information sought to be secured from the plaintiff may not throw any light or have any bearing upon any possible violation of any of the acts aforesaid, but asserts that such information is sought for the lawful purpose within the scope of the powers conferred upon the defendant by Section 6 of the said Commission Act.

The authority of Congress to enact this legislation is claimed under the power to regulate commerce above set out. The reports demanded of the plaintiff are not limited to questions connected with the shipment of coal in interstate commerce or the contracts in reference to, or the prices of coal so shipped, but relates almost entirely to the mining of coal and the price at which it is sold, and the financial condition and operations of the company, and all without any attempt to limit the inquiry to matters pertaining to the coal shipped in interstate commerce.

In fact the Commission in its answer "denies that the plaintiff has the right to segregate its business and to say that part of its business is interstate and part is intrastate, but in order to ascertain if defendant is engaged in commerce, the Courts will look to the entire business transactions of the plaintiff, and if any part of its business is intrastate and a part interstate and the whole business is conducted under one organization as is set forth and admitted in the plaintiff's bill, then the defendant insists that the plaintiff, considering its business as a whole (is engaged in) interstate commerce and the defendant has the right to ask the information sought.

And the information sought in this case is such as would apply as well to a corporation whose business was wholly intrastate as to the plaintiff. The defendant unquestionably is demanding information as to intrastate commerce and as to coal production, and frankly asserts the right to do so.

That there is a radical distinction between production and commerce is clear.

In *Kidd vs. Pearson*: 128 U. S. 1, Mr. Justice Lamar said, p. 20.

"Manufacture is transformation—the fashioning of raw materials into a change of form for use. The functions of commerce are different, the having and selling and the transportation incident thereto constitute commerce; and the regulation of commerce in the constitutional sense embraces the regulation at least of such transportation. The legal definition of the term, as given by this court in *County of Mobile vs. Kimball*, 102 U. S. 691, 702, is as follows: "Commerce with foreign countries and among the States, strictly considered, consists in intercourse and traffic, including in these terms navigation, and the transportation and transit of persons and property, as well as purchase, sale, and exchange of commodities." If it be held that the term includes the regulation of all such manufactures as are intended to be the subject of commercial transactions in the future, it is impossible to deny that it would include all productive industries that contemplate the same thing. The result would be that Congress would be invested, to the exclusion of the states, with the power to regulate, not only manufactures, but also agriculture, horticulture, stock raising, domestic fisheries, mining—in short, every branch of human industry. For is there one of them that does not contemplate, more or less clearly, an interstate or foreign market? Does not the wheat grower of the North-west, and the cotton planter of the South, plant, cultivate, and harvest his crop with an eye on the prices at Liverpool, New York, and Chicago? The power being vested in Congress and denied to the States, it would follow as an inevitable result that the duty would devolve on Congress to regulate all of these delicate, multiform, and vital interests—interests which in their nature are and must be, local in all the details of their successful management."

In *United States vs. Knight*: 156 U. S. 1, page 12, Mr. Chief Justice Fuller said:

"Doubtless the power to control the manufacture of a given thing involves in a certain sense the control of its disposition, but this is a secondary and not the primary sense; and although the exercise of that power may result in bringing the operation of commerce into play, it does not control it, and affects it only incidentally and indirectly. Commerce succeeds to manufacture and is not a part of it."

In *Addyston Pipe & Steel Co. vs. United States*, 175 U. S. 211, which involves the Anti-Trust Act of July 2, 1890; Mr. Justice Peckham, after holding that Congress had the power to regulate interstate commerce could regulate any agreement or combination that operated upon the sale, transportation and delivery of an article of interstate commerce, on page 27, said:

"Although the jurisdiction of Congress over commerce among the states is full and complete, it is not questioned that it has none over that which is wholly within a State, and therefore none over combinations or agreements so far as they relate to a restraint of such trade or commerce. It does not acquire any jurisdiction over that part of a combination or agreement which relates to commerce wholly within a State, by reason of the fact that the combination also covers, and regulates commerce which is interstate. The latter it can regulate, while the former is subject alone to the jurisdiction of the State. The combination herein described covers both commerce, which is wholly within a State and also that which is interstate."

"In regard to such of these defendants as might reside and carry on business in the same State where the pipe provided for in any particular contract was to be delivered, the sale, transportation and delivery of the pipe by them under that contract would be a transaction wholly within the State, and the statute would not be applicable to them in that case. They might make any combination they chose with reference to the proposed contract, although it should happen that some non-resident of the State eventually obtained it."

In *Delaware, Lackawanna & Western Railroad Co. vs. Yrukonis*, 258 U. S., 439, a case involving the Federal Employers' Liability Act, Mr. Justice Day, page 444, said:

"The averments of the complaint as to the manner of the receiving of the injury by plaintiff showed conclusively that it did not occur in interstate commerce. The mere fact that the coal might be or was intended to be used in the conduct of interstate commerce after the same was mined and transported did not make the injury one received by the plaintiff while he was engaged in interstate commerce. The injury happening when the plaintiff was preparing to mine the coal was not an injury happening in interstate commerce, and the defendant was not then carrying on interstate commerce facts essential to recovery under the Employers' Liability Act."

In *Coe vs. Errol*, 116 U. S. 517, it was held that logs out in New Hampshire and hauled to Errol, N. H., to be transported to Maine were not in interstate commerce, Mr. Justice Bradley, page 525, said:

"When the products of the farms or forest are collected and brought in from the surrounding country to a town or station serving as an entrance for that particular region, whether on a river or a line of railroad, such products are not yet exports, nor are they in process of exportation, nor is exportation begun until they are committed to the common carrier for transportation out of the State to the State of their destination, or have started on their ultimate passage to that State. Until then it is reasonable to regard them as not only within the State of their origin, but as part of the general mass of property of that State, subject to its jurisdiction, and liable to taxation there, if not taxed by reason of their being intended for transportation, but taxed without any discrimination, in the usual way and manner in which such property is taxed in the State."

On page 528, he said:

"It is true, it was said in the case of the *Daniel Ball*, 19 Wall. 557, 565: 'Whenever a commodity has begun to move as an article of trade from one State to another, commerce in that commodity between the States has commenced. But this movement does not begin until the articles have been shipped or started for transportation from the one State to the other. The carrying of them in carts or other vehicles, or even floating them, to the depot where the journey is to commence is no part of the journey. That is all preliminary work, performed for the purpose of placing the property in a state of preparation and readiness for transportation. Until actually launched on its way to another State, or committed to a common carrier for transportation to such State, its destination is not fixed and certain. It may be sold or otherwise disposed of within the State, and never put in course of transportation out of the State. Carrying from the farm or forest, to the depot, is only an interior movement of the property, entirely within the State, for the purpose, it is true, but only for the purpose, of putting it into a course of exportation; it is no part of the exportation itself. Until shipped or started on its final journey out of the State it is a matter altogether *in fieri*, and not at all a fixed and certain thing.'"

In order for the Federal State Commission to have the power to require the plaintiff to make reports as to the mining of coal and as to its intrastate shipments, it must appear that this information is necessary to or connected with some object over which the general government has power. There is no claim made that there is any proceeding pending, involving the Anti-Trust Act, or unfair methods of competition, or under the Clayton Act, but in its order defendant demands reports on all the business of the plaintiff.

The defendant relies upon the visitatorial powers of Congress over corporations. In this connection it must be borne in mind that the power of Congress over an instrumentality of commerce, such as a common carrier, is far different from its powers over an ordinary business corporation which merely ships its products or a portion of its products over such carrier.

In fact, as said by Mr. Justice Holmes in *Smith vs. Interstate Commerce Commission*, 245 U. S. 33, on page 45, "It is not far from true—it may be it is entirely true, as said by the Commission (referring to the Interstate Commerce Commission)—that there can be nothing private or confidential in the activities and expenditures of a carrier engaged in interstate commerce."

Apart from the fact that plaintiff is a corporation, it is clear that Congress could not compel the production of the private books and papers of a citizen, except in the progress of judicial proceedings:

*Filbourne vs. Thompson*, 103 U. S., 168;

*Harriman vs. Interstate Commerce Commission*, U. S. 211; U. S., 407.

Mr. Justice Field, then sitting on the Circuit Court, in the case *re Pacific Railway Commission*, 32 Federal Reporter, 241, said: (page 250)

"And in addition to the inquiries usually accompanying the taking of a census, there is no doubt that Congress may authorize a commission to obtain information upon any subject which, in its judgment, it may be important to possess. It may inquire into the extent of the productions of the country of every kind, natural and artificial, and seek information as to the habits, business, and even amusements of the people. But in its inquiries it is controlled by the same guards against the invasion of private rights which limit the investigations of private parties into similar matters. In the pursuit of knowledge it cannot compel the production of the private books and papers of the citizen for its inspection, except in the progress of judicial proceedings, or in suits instituted for that purpose, and in both cases only upon averments that its rights in some way dependent for enforcement upon the evidence these books and papers contain."

(And again on page 254)

"But in accordance with the principles declared in the case of *Filbourne vs. Thompson*, and the equally important doctrines announced in *Boyd vs. U. S.*, the commission is limited in its inquiries as to the interest of these directors, officers, and employees in any other business, company, or corporation to such matters as these persons may choose to disclose. They cannot be compelled to open their books, and expose such other business to the inspection and examination of the commission. They were not prohibited from engaging in any other lawful business because of their interest in and connection with the Central Pacific Railway Company, and that other business might as well be the construction and management of other railroads as the planting of vines, or the raising of fruit, in which some of these directors and officers and employees have been in fact engaged. And they are entitled to the same protection and exemption from inquisitorial investigation into such business as any other citizen engaged in like business."

But the commission claims that, inasmuch as the plaintiff is a corporation, it has the authority claimed under the visitatorial power of Congress. That the power sought is visitatorial in its nature is clear. For in order to give the information and make the reports required, it will be necessary (that it is, so appears from the affidavits on file) for the plaintiff to keep records and books in addition to those now kept by it and by other corporations engaged in a like business, at a considerable expense, and to make monthly reports based on calculations made from such records.

This is not the simple obligation of a witness under a subpoena *duces tecum*, to answer questions and to produce books and records for inspection, but in addition to keep records and make calculations and reports. Such a burden cannot be imposed upon an ordinary witness:

*Northern Pacific Railway Co. vs. Keyes*, 91 Federal Reporter 47; 4 Wigmore No. 2203, page 2989.

The Commission contends that the order served upon the plaintiff does not undertake to prescribe methods of bookkeeping, nor to keep additional records, but under the allegations of the bill and the affidavits filed, I am of the opinion that this contention cannot be sustained.

The plaintiff cannot comply with its orders of the Commission without changing its methods of bookkeeping. That the Act undertakes to vest such powers (certainly as to matters connected with interstate commerce) in the Commission is clear from Section 10 of the Act which provides penalties for any person who shall wilfully, "neglect or fail to make or cause to be made, any false entry in any account, records or memorandum kept by any corporation subject to this act, or who shall wilfully neglect or fail to make full, true and correct entries in such accounts, records or memoranda of all facts and transactions appertaining to the business of such corporation." These powers could only be justified under visitatorial power.

It has been held that Congress has such visitatorial power over corporations engaged in interstate commerce in *Wil-*

son vs. U. S. 221 U. S., 361, and in *Ellis vs. Interstate Commerce Commission*, 237 U. S., 434, but in these cases the power was limited to that portion of the business which was under the control of the Federal Government.

No such power would seem to exist however as to other matters, and the two cases referred were cases in which subpoena *duces tecum* has been issued, requiring the production of a corporation's books in the one case before a grand jury investigating charges of fraudulent use of the mail and in the other before the Interstate Commerce Commission. And in the latter case the Court, through Mr. Justice Holmes, on page 444 (237 U. S.) said:

"If the price paid to the Armour Car Lines was made the cover for a rebate to Armour & Co., or if better cars were given to Armour & Co. than to others, or if, in short, the act was violated, the railroads are responsible on proof of the act. But the only relation that is subject to the Commission is that between the railroads and the shippers. It does not matter to the responsibility of the roads whether they own or simply control the facilities, or whether they pay a greater or less price to their lessor. It was argued that the Commission might look into the profits and losses of the Armour Car Lines (one of the matters inquired about) in order to avoid fixing allowances to it at a confiscatory rate, but the Commission fixes nothing as to the Armour Car Lines except under No. 15 in the event of which we shall speak."

"The appellant's refusal to answer the series of questions put was not based upon any objection to giving much of the information sought, but on the ground that the counsel who put them avowed that they were the beginning of an attempt to go into the whole business of the Armour Car Lines—a fishing expedition into the affairs of a stranger for the chance that something discreditable might turn up. This was beyond the powers of the Commission. In *re Pacific Railway Commission*, 32 Federal Reporter 241. *Interstate Commerce Commission vs. Brimson*, 154 U. S. 447, 478, 479. *Harriman vs. Interstate Commerce Commission*, 211 U. S. 407. The Armour Car Lines not being subject to regulation by the Commission its position was simply that of a witness interested in but a stranger to the inquiry, and the Commission could not enlarge its powers by making the Company a party to the proceedings and serving it with notice. Therefore the matter to be considered here, subject to the qualification that we are about to state, is how far an ordinary witness could be required to answer the questions that are before the court."

In the case of a corporation doing a wholly intrastate business, could it be said that Congress had any visitatorial power under the Commerce Clause of the Constitution of the United States? Clearly it has not. The fact that it happens to be the same corporation in this instance which mines and ships the coal does not give Congress any greater powers to regulation production and the intrastate commerce of such corporation. The visitatorial power of Congress is limited to that part of the business over which it has control, and which under the Constitution it has the power to regulate.

In *Hammer vs. Dagenhart*, 247 U. S. 251, it is said (page 260):

"While the power to regulate commerce among the several States is in the same grant and in the same terms with the power over foreign commerce, yet there is a difference with respect to the extent of that power growing out of the difference in the relation of the United States to the two kinds of commerce, and the difference in the right of the citizen of the United States and the foreigner to engage therein. As to foreign commerce, the United States possesses and exercises all the attributes of sovereignty. As to the interstate commerce, it exercises only that portion of sovereignty delegated to it."

(And again, page 261.)

"However much the Knight Case, 156 U. S. 1, may be weakened by later decisions, its distinction between production and commerce is still effective to prevent direct Congressional regulation of production as distinguished from sale and transportation."

The power claimed by the Commission is vast and unprecedented. The mere fact that a corporation engaged in mining ships a portion of its product to other States does not subject its business of production or its intrastate commerce to the powers of Congress. Doubtless the business of every coal mining corporation, whether engaged in interstate business or not, to some extent affects interstate prices and commerce, but, as stated in U. S. vs. King 156 U. S. 1 (above.)

"The power to control the manufacture of a given thing involves in a certain sense the control of its disposition, but this is a secondary and not the primary sense."

No sound reason is given why there is any difference in the business of coal mining of a corporation which ships its coal to another State and that of a corporation which does not. Interstate commerce is not affected any more in the one case than in the other.

In the case of *United States vs. Basic Products Co.*, 260 Federal Reporter, 472, in which it was urged that Section 6 of this Act was unconstitutional, not only in so far as it authorized investigation and compulsory disclosure of

matters which are beyond the commercial powers of Congress, but also in so far as it attempted to authorize a search or seizure by an administrative agency of the Government without charge or suspicion, Justice Orr of the District Court of the Western District, Pennsylvania, said:

"While the contention of counsel is probably sound, this Court does not deem it necessary to go further than to hold that the Commission has not the power to carry on investigations which it has assumed in the present case."

In the same decision he also said:

"Imagination, if not experience, can suggest that persons, partnerships, and corporations may be engaged in interstate commerce by the transportation of merchandise solely by water; that their activities may give them their income from lighterage; or they may be engaged in the sole business of forwarding goods, with no interest in the vessels or wagons on which they are transported. The foregoing are merely the illustrations of activities which may perhaps be within the scope of the powers granted to the commission by the act as found in the fifth section thereof."

"Imagination, however, cannot suggest such an extension of constitutional limitation as may justify the investigation undertaken by the commission in this case. Indeed, so far as it has been brought to the attention of the court, no such assertion of power has ever been made to the courts. Investigation under Subdivision A, Section 6, is limited to corporations engaged in interstate commerce. The defendant is engaged in manufacture."

I am of the opinion, therefore, that no such visitatorial power as that claimed by the Commission in the instant case has been vested in Congress by the Constitution, nor could Congress delegate such power to the Commission.

But did Congress undertake to vest such power in the Commission? It is the duty of the courts, if possible, to give the statute a construction which would not conflict with the Constitution.

*Knight Templar Co. vs. Jarman*, 187 U. S., 197, 205.

The corporations referred to in the Act are, by its terms, limited to those engaged in "commerce" as defined, the Act, and all the powers vested in the Commission should be and it seems may be construed with this limitation. But the Commission has undertaken to construe the Act otherwise, and to take steps under its construction of the Act to require information and reports not relating to interstate commerce, but relating chiefly or wholly to production, and under its order the information which it has the power to demand cannot be separated from that over which it has no control.

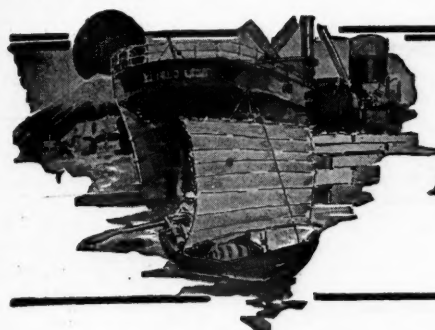
While as to other matters, as stated in *re Pacific Railway Commission*, supra, Congress may authorize the Commission to obtain information upon any subject, which, in its judgment it may be important for it to possess, it may not compel the production of such information in respect to matters over which the Federal Government has no control. It follows, therefore, that the Commission cannot compel the making of reports it has demanded of plaintiff.

The plaintiff further contends that this power of the Commission has been taken away by Presidential order. Much proof, in the form of affidavits, has been introduced by the defendant to show contemporaneous constructions of this order, and that the power claimed by the Commission in this case was not taken from it. The order is ambiguous, but, in view of my opinion as to the power of the Commission, it is not necessary to decide this question in passing upon application for a preliminary injunction.

Section 10 of the Act provides that "if any corporation is required by this Act to file any annual or special report shall fail to do so within the time fixed by the Commission for filing the same, and such failure shall continue for thirty days after notice of such default, the corporation shall forfeit to the United States the sum of \$100 for each and every day of the continuance of such failure, which forfeiture shall be payable into the Treasury of the United States, and shall be recoverable in a civil suit in the name of the United States brought in the district where the corporation has its principal office or in any district in which it shall do business."

The plaintiff has failed to file the report demanded and the Commission has notified it that steps will be taken to recover the penalty prescribed above. The jurisdiction of a court of Equity is not questioned by the defendants, and as I am of the opinion that the commission has not the power to exact the reports and information sought, the injunction prayed for will issue upon plaintiff executing bond with surety to be approved by the Court in the penalty of \$5,000.

Sgd. JENNINGS BAILEY,  
Justice.



# FOREIGN MARKETS AND EXPORT NEWS



## Finland Neither Produces Nor Exports Coal

Commenting on the coal situation in Finland, Consul Leslie A. Davis, Helsingfors, states that that country produces no coal, lignite, nor coke, and exports none. The amount of coal and coke consumed in Finland during the period from 1913 to November, 1919, corresponded with the amount imported into the country during the same period.

The principal consumers are electrical and gas works, shipyards, and steamers. The factories have consumed some, but most of them, although equipped for burning coal or coke, have been obliged to use wood. Practically no coal has been used by private persons for heating purposes since 1913, as it has not been obtainable in sufficient quantities. Peat is used more or less for heating houses, especially in the northern part of the country; but wood is the kind of fuel in general use throughout Finland.

All the coal and coke imported comes from England. The greater part has come to Helsingfors, but some has been brought to Hango, Abo, and Viborg. The only special discharging facilities are those of the gas works at Sornas (Helsingfors), which can discharge about 500 tons a day. Coal is unloaded elsewhere by wheelbarrows. All the coal and coke brought to Finland is consumed in the ports of entry. Consequently, there is no transportation of coal by land.

Imports of coal and coke from 1913 to November, 1919, were as follows:

Years	Coal		Coke	
	Long Tons	Value in Finnish Marks a	Long Tons	Value in Finnish Marks a
1913.....	528,518	13,424,381	4,787	1,459,154
1914.....	212,916	5,422,150	12,243	373,187
1915.....	4,490	684,609	2,843	742,151
1916.....	17,357	3,526,971	11,980	6,085,948
1917.....	8,988	734,350	7,130	3,622,152
1918.....	24,846	10,057,562	1,263	663,059
Jan.-Nov., 1919	29,401	14,423,591	5,060	1,885,631

a The normal exchange value of the Finnish mark is 19.3 cents. It is greatly depreciated at present.

Owing to the non-production of coal in Finland, and to the limited amount imported, there are no questions of capital and labor. Coal consumption and trade will be considerably increased by the resumption of normal shipping, as there is a persistent demand for coal at almost any price.

## Coal Exports for February Show Large Increase

Exports of bituminous coal totaled 1,168,806 tons during February; of anthracite, 272,368, a noteworthy increase compared with the same month of 1919. The classification of February exports as well as figures for February, 1919, have been compiled by the Bureau of Foreign and Domestic Commerce. They are as follows:

Coal:	Feb., 1919		Feb., 1920	
	Tons		Tons	
Anthracite.....	216,018		272,368	
Bituminous.....	683,708		1,168,806	
Exported to (in part):				
Italy.....	4,933		81,739	
Netherlands.....	15,076		49,634	
Canada.....	446,429		541,270	
British West Indies.....	13,756		17,906	
Cuba.....	40,644		130,846	
Argentina.....	38,993		70,902	
Brazil.....	67,825		47,241	
Coke.....	48,806		59,866	

The following tables show exports of domestic coal and coke from the United States by countries, as well as by customs districts, and also bunker coal supplied to

vessels in the foreign trade at specified districts during February, 1920:

## COUNTRIES TO WHICH U. S. COAL WAS EXPORTED

	Anthracite Tons	Bituminous Tons	Coke Tons
Azores and Madeira Islands.....		1,501	
Belgium.....		5,878	510
Denmark.....		72,649	
France.....	7	18,669	
Greece.....	5	81,739	
Italy.....	192	49,634	
Netherlands.....	520		
Norway.....			35
Poland and Danzig.....		6,762	
Roumania.....		2	2
Russia in Europe.....		6,470	
Spain.....		3,351	
Sweden.....		8,886	3
Switzerland.....		17,123	
Bermuda.....		5,340	
British Honduras.....		53	
Canada.....	254,958	541,270	34,119
Guatemala.....	50	50	3
Honduras.....	300	750	6
Nicaragua.....		150	
Panama.....	289	30,692	
Mexico.....	339	11,263	17,297
Jamaica.....		5,436	
Trinidad and Tobago.....		3,567	
Other British West Indies.....		8,903	
Cuba.....		130,846	87
Danish West Indies.....		2,212	
Dutch West Indies.....		8,617	
French West Indies.....		831	
Dominican Republic.....	688	1,919	3
Argentina.....		70,902	
Brazil.....		47,241	
Chile.....		18,353	2,919
Colombia.....	3		
Ecuador.....			10
Peru.....		10	4,862
Venezuela.....		1,800	10
China.....		10	
Egypt.....		5,927	
Totals.....	272,368	1,168,806	59,866

## COAL EXPORTS BY CUSTOMS DISTRICTS

	Anthracite Tons	Bituminous Tons	Coke Tons
Maine and New Hampshire.....	5	1,961	100
Vermont.....	90	82,609	272
St. Lawrence.....	85,903		1,070
Rochester.....	1,480	44,762	
Buffalo.....	164,519	291,795	20,898
New York.....	2,933	2,858	1,926
Philadelphia.....	13,717	49,622	
Maryland.....		67,462	6,429
Virginia.....		423,841	86
South Carolina.....		62,222	
Georgia.....		6,557	
Florida.....	1,300	189	
Mobile.....		52	
New Orleans.....	390	5,181	177
Sabine.....			42
San Antonio.....	106	575	
El Paso.....	190	6,998	6,927
Arizona.....		1,750	10,149
Southern California.....	3	38	
San Francisco.....		1	11
Washington.....	46	307	54
Dakota.....	110	2,209	301
Duluth and Superior.....	558	13,320	93
Michigan.....	49	104,317	11,331
Porto Rico.....		180	
Totals.....	272,368	1,168,806	59,866

## BUNKER COAL

Districts:	Tons
Maryland.....	29,157
New York.....	191,128
Philadelphia.....	38,960
Virginia.....	140,891

## Freight Rates to Europe Advance

Freight rates to Europe, according to W. W. Battie & Co.'s coal trade freight report, are higher than a week ago but to other destinations they are unchanged.

Rates by steamer are as follows:

	Rate	Tons Displaced
Stockholm.....	About \$23.00	800
Gothenburg.....	22.00/22.50	1,000
Antwerp/Rotterdam.....	19.50/20.00	1,000
Hamburg.....	21.50/22.00	1,000
French Atlantic excluding Rouen.....	19.50/20.00	800
Lisbon.....	18.00/19.00	1,000
Barcelona.....	21.50/22.00	1,000
Algiers.....	21.50/22.00	800
Genoa/Leghorn.....	22.50/23.00	1,000
Spezia/Savona.....	22.50/23.00	1,000
Piraeus.....	24.00/25.00	1,000
Trieste/Venice.....	About 24.00	1,000
Port Said.....	About 26.00	1,000
Constantinople.....	About 26.00	500
Pernambuco.....	About 15.50	500
Bahia.....	About 15.50	500
Rio.....	14.25/14.50	1,000
Santos.....	15.00/16.00	600
Buenos Aires or La Plata or Montevideo.....	13.00/13.50	1,000
Para.....	About 14.50	500
Rosario.....	15.50/16.50	750
Bahia Blanca.....	About 16.00	1,000
To Nitrate Range.....	9.00/10.00	750
Havana.....	6.00/6.50	600
Sagua or Cardenas.....	8.00/8.50	300
Cienfuegos.....	About 8.00	500
Caibarien.....	8.00/8.50	300
Guantanamo.....	About 8.00	500
Manzanillo.....	About 9.00	300
Bermuda.....	7.00/7.50	300
Bermuda p. c. and dis. free		
Kingston.....	About 9.00	400
St. Lucia.....	About 9.50	500
Barbados.....	About 9.50	500
Santiago.....	About 8.00	500
Port of Spain, Trin.....	9.50/10.00	500
Curacao.....	8.50/9.00	500
Free p. c. Curacao		
Demerara.....	13.00	400
St. Thomas.....	8.50/9.00	500

All above rates gross form charter.

## Turkey Plans to Increase Production of Lignite

Turkey's lignite mines are a striking illustration of that country's mismanagement of coal matters, according to the *Tasfri Efkar*, a Turkish newspaper. During the war these were exploited by the Government and the people, but after the armistice was signed work at the mines almost ceased.

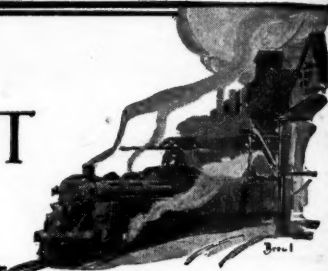
The president of the "Commission d'Approvisionnement" declares that the lignite mines of Agatchli are in bad condition and that the Ayazma mines alone are being exploited by the "Direction des Usines de Guerre Imalatli Harbi." The commission has studied this matter and has decided to employ all possible methods to increase production. For this purpose it has been decided to employ about two hundred Chinese laborers in the mines. The Ayazma mines are producing forty metric tons daily, but efforts will be made to increase this output.

## British Guiana Imports Coal

All coal consumed in British Guiana, states Consul McCunn, has to be imported, as none is produced in the colony. The quantity imported from the United States and Great Britain in 1918 was 86,600 tons, whereas in 1919 only 11,090 tons were received because of the lack of coal importations from the United States and the curtailment of those from Great Britain. In February the market was bare of all supplies. Georgetown is not a coaling station, and ships expecting to bunker there will generally meet with disappointment or be obliged to pay very high prices for any coal procurable.



# MARKET DEPARTMENT



## Weekly Review

*Demand for Coal Is Keen Everywhere—Western Conditions Are Improving—Hampton Roads Handles Cars More Speedily Than Before—Assignment of Cars for Railroad Use Seems Certain—Runaway Market in Evidence—Hard-Coal Situation Is Alarming*

**W**HEN the railroad strike is at an end, and from present indications it soon will be, many operators foresee the danger of a wild opening of the coal market and much speculation, together with fancy prices. It is hoped that this may be avoided, for if it is not the Government probably will resume price control.

Conditions in the West have improved in the past week. A better car supply has been reported, the "outlaw railroaders" having returned to work in that region. However, the effects of the acute shortage can still be seen in the cities, some of the large manufacturing plants having been forced to close, thus causing many men to be laid idle. Few dealers have been fortunate enough to renew last year's contracts for Eastern coal, and as a result these coals have practically disappeared from the Western market.

At Hampton Roads car supply has improved to such an extent that bottoms for which coal has been arranged

are being loaded with almost normal dispatch, and coal continues to be in active demand. In that locality more than a few signs are seen of a runaway market, \$9 having been paid for spot coal.

In New England the situation is possibly worse than in any other part of the East, and coal traffic is almost at a standstill. For quite some time the railroads have been operating on narrow margins and, no relief being in sight, a large portion of coal moving on the lines of the New York, New Haven & Hartford R.R. was confiscated by that road, thus leaving those plants to which the coal was destined in a serious plight.

Because of the tactless methods used by the railroads last year many of the operators in the coal industry have refused to renew last year's contracts, even though the purchasing agents are willing to pay higher prices. With conditions such as now rule furnishing an excuse, the practice of "assigning

cars" for railroad service will undoubtedly be restored, but even at that the railroads will have much difficulty accumulating reserves.

With the continuance of the boatmen's strike and embargoes still effective as a result of the switchmen's strike, conditions in the hard-coal industry are becoming alarming. Barges and tugs are tied up at the loading ports, and because of the few destinations to which shipments are permitted the tonnage shipped has been small.

The railroad strike has hit both the byproduct and beehive coke industry. On account of the unusual car shortage the byproduct ovens have been unable to secure stocks of coal such as they usually carry when conditions are normal, and these ovens are now suffering from an extremely severe shortage. Some fancy prices were paid for foundry coke, some reaching \$15 a ton, but most of the operators are resisting such increases and regard \$15 as a limit that should not be exceeded.

### WEEKLY PRODUCTION

The weekly report on the production of bituminous coal, anthracite, and beehive coke, compiled by the Geological Survey, Department of the Interior, April 17, 1920, states that the rate of production during the week ended April 10 was almost exactly the same as that of the preceding week. The total output of soft coal, including lignite and coal made into coke, is estimated on the basis of railroad shipments at 9,773,000 net tons. The line of 1920 production continued its course above the years 1917 and 1919 but failed to recover from the depression attending the advent of the new coal year as promptly as did the 1918 line.

The cumulative production in tons since the beginning of the calendar year follows with comparative figures for the three years preceding:

	Production first 86 working days
1917 .....	152,013,000
1918 .....	150,274,000
1919 .....	118,730,000
1920 .....	150,255,000

The year 1920 is thus within 1,760,000 tons of the record of 1917, has overtaken 1918, and has passed 1919 by 31,525,000 tons.

The production of anthracite during the week ended April 10 recovered slightly from the depression of the preceding week but failed to reach the level recorded in the last week of March. The total output (including sales to local trade and mine fuel) is estimated on the basis of reported railroad shipments at 1,473,000 net tons. This was an increase of 15 per cent over the week of April 3, when the observance of Good Friday and of Mitchell's Day mate-

rially reduced the output. It was, however, 26 per cent less than that of the week of March 27.

The cumulative production since Jan. 1, 1920, now amounts to 23,043,000 net tons, an increase of 2,680,000 tons over the corresponding period last year, when the dull market prevailed which affected the coal after the armistice.

Production of beehive coke during the week ended April 10 is estimated at 477,000 tons, an increase of 1,000 tons over the revised figures for the preceding week. These estimates are based upon shipments reported by the principal carriers. Because of changes in organization attending the transfer of the railroads to private operation, the returns have in some instances been delayed and the figures presented are therefore subject to revision.

Compared with the corresponding week last year, when the post-war slump in demand had set in, the week's production showed a substantial increase. The cumulative production from Jan. 1, 1920, to April 10, amounted to 6,427,000 tons, as against 6,554,000 tons during the corresponding period last year.

### Atlantic Seaboard

#### BOSTON

Coal traffic almost at a standstill.—Railroads in need of fuel.—Industrial consumers anxious.—Dumping at New York and Philadelphia piers much curtailed.—Hampton Roads dispatch improved.—High prices prevail at rehandling points for inland delivery.—Anthracite receipts extremely light.

Bituminous.—Except to points on the Boston & Albany and on the New Haven

there is only a very light volume of coal moving. The New York Central embargo against the Boston & Maine is still in effect, with no material improvement in sight. The New England roads are short of motive power and it will probably be several weeks before they can catch up. The fact that the railroads in this territory in themselves have been practically unaffected by the switchmen's strike is favorable for an earlier clearing up than would otherwise have been the case.

It develops that the railroads here are operating on very narrow margins of supply. Certain of them are removed to be down to 10 days, in any case, they have renewed wholesale confiscation of commercial coal in transit. On some of the railroads practically all of this coal was shipped prior to April 1, either on last year's contracts or on the recent Government price. The result is that a large number of consumers who have been deprived of their low-priced coal are irate over the necessity of now replacing this fuel at much higher prices.

The railroads are naturally finding it very difficult to arrange new contracts. Operators, many of them, are inclined to resent the tactless methods used a year ago and while some railroad purchasing agents are intimating their willingness to pay market prices they are at their wits' ends to know what to do to secure coal. "Assigned cars" are certain to be restored under present conditions, but even at that there is every prospect that railroads will have a lot of difficulty accumulating their reserves.

Steam users are so well aware of the general fuel situation that the trade is hearing very little from them. It is realized that shippers are helpless for the most part, and that until traffic is again being handled by the roads to and about

New York there will be very little chance of relief. Those who took advantage of opportunities a month ago to get steam anthracite are in that much better position.

At New York and Philadelphia dumping practically ceased on April 12. One of the New York piers has been worked spasmodically, but the Philadelphia and Reading piers at Philadelphia were out of commission the whole week. Coastwise tugs that ordinarily bunker at New York have been held at New London or Providence awaiting adjustment of present difficulties.

Hampton Roads coals are in active demand. Car supply and movement have improved to such extent that bottoms for which coal has been arranged are meeting with almost normal despatch. Very high prices are reported for spot coal. No. 9 has been realized per gross ton f.o.b. vessel, and this nets very close to \$7 at the mines. At the piers there are more than a few signs of a runaway market. Retail dealers here with important requirements dependent upon them and not enough Pocahontas or New River due them on contract are at a loss which way to turn.

Correspondingly high prices are being realized at this end. \$10.50@11.50 is still quoted on Pocahontas and New River on cars Providence and sales have been made at \$12 per gross ton f.o.b. Portsmouth, N. H.

Pocahontas and New River on contract are being sold at \$4.25@4.50 per net ton f.o.b. mines plus the 13 per cent wage increase. Spot coal is quoted f.o.b. mines at \$5.60@5.75.

**Anthracite**—Because of embargoes and the switchmen's strike at the piers the volume of domestic sizes headed for this territory is extremely light. Barges and tugs are tied up at the loading ports and all-rail there are so few destinations to which shipments are permitted to be made that the aggregate tonnage is small.

Another week of such conditions and the public will be getting alarmed. Not in years has the first half of April passed with so meagre a record of shipments.

#### NEW YORK

**Railroad strike depletes coal stocks at the New York Tidewater.**—Anthracite situation is serious. Local yards are nearly bare of coal. Steam sizes scarce. Government and railroads confiscating coals. New England situation improves. Towboat owners get high rates for towing boats. Local public utility corporations receive supplies.

**Anthracite**—Receipts at New York Tidewater have been seriously affected by the railroad strike. The loading piers are nearly bare of coal and what remains cannot be moved because of the refusal of the loaders to work while the railroad employees are idle. Another factor in the situation was the strike among the towboat men. This seriously interfered with deliveries and the few who remained at work were not willing to take the chances necessary to get the loaded boats from the loading piers to the retailers' dock.

The local situation is quiet. Coal is wanted but dealers cannot get it, although it is said there are many cars on sidings between here and mines. Retail dealers are in a serious condition. The smaller yards are nearly bare of coal and a continuance of present conditions for another week would find the city yards almost without an exception, bare of supplies.

The smaller sizes are extremely short. Because of the strike of the railway employees no coal has been coming forward and the yard stocks have been reduced considerably because of the heavy consumption due to the unseasonable weather conditions. Buckwheat and rice are practically out of the market while the only available of the smaller sizes were barley and birdseye.

Current quotations for company coal per gross ton at mine and f.o.b. Tidewater, at the lower ports are as follows:

	Mine.	Tidewater.
Broken .....	\$5.95	\$7.80
Egg .....	6.35	8.20
Stove .....	6.60	8.45
Chestnut .....	6.70	8.55
Pea .....	5.30	7.05
Buckwheat .....	3.40@3.75	5.15@5.50
Rice .....	2.75@3.25	4.50@5.00
Barley .....	2.25@2.50	4.00@4.25
Boller .....	2.50	4.25

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates.

**Bituminous**—The local bituminous market is upset because of the railroad troubles and the scarcity of coal at this Tidewater. Supplies at the loading piers are down to rock bottom, with no prospects of betterment until the labor troubles are at

an end and cars are moved, which is a deplorable condition.

Although there are several hundred thousand tons of coal on the railroad sidings between the docks and the mines the railroads cannot move it because of the strike of the switchmen. Then conditions have suffered from the refusal of the loaders at the piers to load the boats waiting for cargoes. Another difficulty has been the failure to secure tugs to bring loaded docks to the city at reasonable rates. In some instances it is said that buyers have been quoted as high as \$250 to have a loaded boat towed to this city from the lower docks. Because of these high rates many of the ordinary consumers have run short of fuel and are on the verge of being forced to close their plants.

Supplies at the loading docks have become so small that the Federal Government is reported to have decided to confiscate what remains for its own use or for the use of public utilities. The coaling of tugs was also stopped at some of the docks. The railroads are also confiscating coal.

Reports from the Lake ports indicate a serious lack of coal due to the railroad strike. The situation in New England has improved considerably the past week and a general industrial shut down was averted. The harbor strike shut off shipments to New England points by water routes and via the Harlem River.

Local stocks are low, the receiver of coal on contracts being in no better position than the buyer of free coals. Because of conditions there are many shippers who refuse to quote prices on the ground that it would be impossible to make deliveries.

Of 81 boats at the lower ports the early part of last week, 61 had been taken away up to Friday. Quotations on loaded boats ranged from \$10@15, depending upon the quality of the coal, while those who had coal at the docks made quotations ranging from \$4.25@5.25, according to grade and quality.

Production slowed down because of the lack of cars and mine quotations were hard to obtain. Local public utility corporations are well supplied with fuel and are receiving their daily allotment.

#### PHILADELPHIA

**Anthracite trade upset by rail strike.**—Retail stocks soon depleted. Embargo against shipments into city. Consignments to line points, but deliveries few. Plants running short of fuel. Bituminous trade almost at standstill. Orders taken subject to delivery by railroads. Little price change.

**Anthracite**—The railroad strike has badly crippled the anthracite industry. At this writing the yards in the city after one week of the strike are practically empty and even should the strike be settled at once it will take the biggest part of another week before they will get enough coal to keep them going. The dealers who have had some sort of stock on hand are doing their best to parcel it out to the utmost advantage of their trade.

Inasmuch as April to date has been unusually cool, coal burning continues and there is a strong demand for small lots of coal for immediate use. Retail dealers are almost a unit in deciding not to let any one customer have more than a ton of coal at a time, and are of course giving special preference to consumers with illness in the home. Even under these conditions the people, still beset by the fear of high prices, are endeavoring to accumulate stocks of coal.

With the oncoming of the strike the city proper was soon embargoed against receiving consignments from the mines and the only coal that has gotten on the market has been a few stray cars that had reached the freight yards before the trouble began. In a few instances volunteer switching crews have made deliveries of such shipments to the dealers, until at this time there is very little fuel near the city.

During the first few days of the strike its effects were not nearly so noticeable in the mining region and the movement of cars was continued there with a fair degree of certainty.

This condition also gave the dealers an opportunity to move the accumulation of screenings which usually reached the top at this time of the year and which ordinarily the coal man is glad to have moved at a nominal price. There was also a good tonnage of steam sizes in transit, but this is fast being diverted to the public utility plants, such as city water works, and also is being taken by the railway companies for engine fuel.

The bituminous trade is almost at a standstill. Many of the houses still continue to solicit orders at prices ranging from \$4.75@5.25 f.o.b. mines for Pennsylvania steam coals, with gas coals

around \$5.50 f.o.b. mines, both Pennsylvania and Fairmont. However, all orders are taken subject to the ability of the railroads to make delivery. As is natural under present conditions the car supply at the mines is quite meagre and it is only a question of a short time before they will be compelled to close entirely, as with no empties moving in the direction of the region this can be the only result.

There are just a few lines of railroad in this vicinity that are not entirely embargoed and manufacturers able to receive delivery on such lines are having coal offered to them by brokers around \$5.50 f.o.b. mines, regardless of quality, and usually it is not difficult to make a sale, as no concern wants to shut down and is willing to take a chance on what offers. With the market in its present state no shipper is anxious to make contract, although some consumers who have been slow in this respect are still seeking to cover themselves.

#### BALTIMORE

**Strike tie-up on railroads makes fuel situation desperate.**—Curtailed of plants but no big closings at time of writing. Movement and car supply dwindle steadily. Most firms here stop open selling. Hard-coal men can afford to drift.

**Bituminous**—With Baltimore and vicinity in the grip of an almost complete suspension of railroad movement because of the strike the fuel situation here this week has been desperate. Up to this writing no big closings have been noted of industrial plants, but a number have been near the danger line and some curtailments have been noted. In one case a big water company which supplies a large part of the suburban territory of Baltimore had but a few hours supply of coal but got relief when the Baltimore & Ohio apportioned some of its own fuel to keep the public utility running.

This railroad at this time reports a car supply at the mines of only 12 per cent and on the Eastern lines, only 10 per cent. The number of cars loaded daily now is below the thousand mark, while the supply at the Baltimore & Ohio and Western Maryland pool at Curtis Bay has dropped to 2,015 cars. There are less than 500 cars at the Canton pier of the Pennsylvania, and the line points near the city have been swept clear of reserve fuel. With twenty-one steamers in the stream here waiting to take on about 95,000 tons of coal the issuance of permits is being tightened, and another tie-up of export movement is in sight unless the relief comes quickly.

A conference in Baltimore this week to adjust wages, etc., as between the Northern West Virginia Coal Operators' Association and the officials of District 17, United Mine Workers of America, worked out a plan of adjustment which promises to settle any chance of controversy in that section.

There is not much talk of stable prices in this section just at present. Contracting is going on at rates ranging from \$4.50@5.25 f.o.b. mines for various grades of both steam and gas coals. The spot market is some 50c. higher in most cases, where there are any sales at all at present. Most of the big concerns here are refusing to sell in the open market and are devoting their attention to getting the meagre supplies received into the hands of old consumers on old or new contracts.

**Anthracite**—The hard-coal men are mainly lying back and waiting in the present crisis. The fact that deliveries have practically ceased does not worry as it would in days of cold weather. There is practically no urgent demand here for immediate delivery and what is in evidence can be cared for from stocks in the city, although they are by no means liberal.

#### Eastern-Inland

#### PITTSBURGH

There was full production last week by the river mines of the Pittsburgh district while there was very little production by the rail mines, on account of the railroad strike.

Monday there was rather light placement of empties, but the mines had considerable numbers left over from the preceding week, and the day's production was but little below normal, and there was some production Tuesday, but in the rest of the week, and up to this writing, there has been practically no operation of the rail mines. The coal loaded early in the week was moved by the railroads to sidings or to scales at yards and did not get any farther.

As the rail strike ends the railroad man-

agements will devote their first attention to the movement of foodstuffs and perishables, coal probably coming next. Quick return of empties is improbable, and for perhaps two or three weeks after the rail strike is really over car supplies may be poorer than they were just before the strike.

Eventually an inadequate car supply is expected, of course, and while that will uncover a labor shortage, leading operators of the district predict that there will be enough coal for all regular requirements, including current demand and lake demand, with probably a little for stocking at the rates previously observed by large consumers, but the common feeling is that there will be no coal for the extra stocking that is being urged.

Operators admit the principle may be good, in general, but hold it is not applicable to the Pittsburgh district, on account of the lake business of the district. Not infrequently the district has shipped more coal in summer than in winter.

There has been practically no market the past week, but prices may be regarded as nominal on the same level as last quoted: Contract steam, \$3.25@3.50; contract gas, \$3.75@4; prompt coal, \$4@4.50, per net ton at mine, Pittsburgh district.

#### COLUMBUS

With the switchmen's strike on, practically no coal is being mined in Ohio.—Car supply has been gradually reduced to a point where none are available.—There is a good demand for all grades and prices continue strong.

Just at the time when details of the new wage scale were being worked out and some betterment in the car supply was noted, the switchmen's strike occurred, and, as a result, production in Ohio fields is almost nil. The strike did not have its full effect until early in the week of April 12, when empties stopped coming into the mines. By the middle of the week every mine in Ohio was completely tied up and will remain so until the strike is settled and the trainmen resume work.

The cutting off of the fuel supply is already affecting many industries, more especially public service concerns. Their reserves were small, because of continued car shortage and many were operating with less than two weeks' supply. Hospitals were also rather short of fuel and some special effort was necessary to supply them. Manufacturing concerns were not very well stocked with the exception of rubber factories which were not affected. Some factories were compelled to go on a half-time basis to conserve fuel.

The domestic trade is also active, as dealers are in the market for stocks to take care of householders who desire to lay in stocks early. All coals are in strong demand with Pocahontas the strongest feature. With only 50 per cent of former Pocahontas tonnage allotted to this territory there is a scramble for available tonnage.

Retail prices are strong at the levels which have prevailed for several weeks. Most of the Columbus dealers have small stocks to take care of current business. Hocking lump sells at \$7.50, delivered with mine-run at \$7.25; Pomeroy lump and mine-run are quoted at the same figures. West Virginia splints sell at \$8.50 for lump, and \$8.25 for mine-run while Pocahontas is about \$10@10.50 delivered.

Prices at the mines of the principal coals sold in Ohio are:

Hocking lump.....	\$3.75
Hocking mine-run.....	3.50
Hocking screenings.....	3.25
Pomeroy lump.....	4.00
Pomeroy mine-run.....	3.75
Pomeroy screenings.....	3.50
West Virginia splints lump.....	4.50
West Virginia mine-run.....	4.25
West Virginia screenings.....	4.00
Pocahontas lump.....	5.75@6.00
Pocahontas mine-run.....	5.50@5.75
Kentucky lump.....	4.75
Kentucky mine-run.....	4.50

#### CINCINNATI

Railroad strike has had little effect on the situation here.—Enough fuel is arriving daily from the fields in Kentucky and West Virginia by way of the Ohio River to keep the domestic and industrial consumers supplied.

Had not the industrial plants purchased considerable tonnage before the advance in price, there might have been a shortage with the present railroad strike.

Another advance in price before May 1 is the general opinion of operators who claim they are not making expenses, with the present prices. Retail dealers are holding off from buying believing that the price will decline during the next sixty days. This hardly seems possible, as wages for workmen are going higher daily.

More than 100 shippers of lake coal from Kentucky and West Virginia representing the output of many mines, assembled last week for a conference with H. M. Griggs of Cleveland, Chairman of the Ore and Coal Exchange Commission, and the heads of seven railroads in an effort to arrange better traffic and shipping conditions between the fields and ports of the great lakes.

### Southern

#### LOUISVILLE

Production very light, with car shortage chronic.—Retailers buying practically no coal except for immediate use; and industrial consumers buying only where they have to.

Due to continued car shortage production continues very light, and due to the switchmen's strikes in various cities, movements of cars have been further checked. Embargoes have been numerous, and this has probably aided somewhat such districts as are not suffering from strikes or embargoes.

While general demand for coal at present prices is comparatively light, even a light demand is more than operators can expect to fill and at the same time fill contract orders under existing condition. The result is that such new business as it taken must carry a price to offset the present heavy operating costs.

Contracts are not wanted and not even discussed to any extent as neither retailer nor industrial consumer has any idea of stocking coal at present markets. Everyone feels that a near normal value will be re-established in event of a 75 per cent. car supply. However, there is no real reason for expecting a good car supply for some time to come under existing conditions.

Prices of industrial coal are too high for buying except of needed coal by byproduct and utility plants, and manufacturers and users who are close to the bottom of their supply. Many of these still have contracts.

There really is not much of a market as prices are not at all standardized, and it is merely a question of how much coal an operator has to offer, and how badly the buyer needs it. Very few operators have much surplus production at best.

Prices show practically no change other than that some individual operators are getting even more money, than they were last week. Quotations at mines show that Eastern Kentucky is quoting around \$4.50 @ \$5.25 for lump; mine-run, \$4.00 @ \$5; Natchez & Southern, \$3.50 @ \$4. Western Kentucky, lump, \$3.25 a ton; mine-run, 2.85 @ \$3.00; Natchez & Southern \$2.50 @ \$2.60; fine screenings, \$2.25 @ \$2.40.

#### BIRMINGHAM

With transportation facilities slightly improved, coal is moving more satisfactorily and production is showing some increase.—Market continues to show great strength for all grades coal.—Some contracts have been executed with domestic dealers, but contracting for steam coal has not assumed any proportions as yet.

The movement of coal is slightly smoother and more satisfactory than last week, some improvement being made in the car supply furnished by the coal-carrying lines. Following the institution of injunction proceedings against the Southern Ry. for preferential car supply to contract mines on its lines an amicable adjustment of the trouble has been reached whereby non-contract operations are to furnish the railway company the deficiency in tonnage received from mines holding contracts for fuel coal at an advance of 50c. per ton above government prices for the respective grades, which will about equal present quotations.

Proposals furnished on fuel requirements of the Louisville & Nashville, and Frisco RR. for the year ending April 1, 1921, have not yet been acted upon by these lines, the price of fuel furnished since April 1, being subject to adjustment on basis of figures agreed upon when contracts are executed. Contracting for steam coal has not made much progress as yet, awaiting stability in mine prices. Spot demand strong. Quotations are as follows per net ton mines:

Coal District:	Lump	Prepared
Big Seam.....	\$2.95@3.35	\$3.45
Black Creek.....	4.00	4.45@4.50
Cahaba.....	4.00@4.35	4.35@4.50
Carbon Hill.....	3.35@3.50	3.50
Nickel Plate.....	3.35@3.50	

Some domestic contracts are being made on an April 1, base price, providing for an increase of 10c. per ton through September, and in some instances a maximum

price has been fixed for deliveries after September, there being a desire on the part of the larger representative distributors and producers to throw some safeguard about a runaway market, which is a natural probability account of the strong demand and short supply, which conditions will likely exist throughout the year, both as to domestic and steam coal. April quotations are as follows per net ton mines:

Coal District:	Lump
Big Seam.....	\$3.25@3.50
Black Creek.....	4.50@5.50
Cahaba.....	4.50@6.00
Carbon Hill.....	3.50@3.75
Montevallo.....	6.75@7.00
Corona.....	4.50

### Lake Region

#### BUFFALO

No coal of account moving.—Striking switchmen are cutting out all traffic.—Promise of an early return to work.—Pittsburgh standing still.—Next to no anthracite.

Bituminous.—It seems that the coal trade is beset by either one thing or another continually. If it is not car or price complications, it is something worse. At present scarcely a wheel is turning in the freight lines of the railroads from the switchmen's strike which came this way from Chicago, and at present is tying this city up worse even than the centers further West. It is said that Buffalo and Pittsburgh are now the center of the difficulty, which means that it will not last much longer.

So far there has not been much real distress from the lack of coal. Quite a good many factories have had to shut down, but there is still coal for public use and it is likely to hold out to the end of the strike. If the failure of the strike, as seems to be certain now, would lessen the evil and menace of that sort of thing it would be worth all it has cost.

In a time like this prices mean little, so that the following list will have to be taken as mostly a reminder of what coal did sell for when we had any to sell: Allegheny Valley, all as mine-run, \$5.75 @ \$6; Pittsburgh and No. 8, lump, \$6.25 @ \$6.50; same, mine-run, \$6 @ \$6.25; Youghiogheny gas, \$6.50 @ \$6.75; Smokeless, \$6.50 @ \$6.75; Pennsylvania smithing, \$6.75 @ \$7, per net ton, f.o.b. here.

Anthracite.—The trade is at a standstill, or pretty nearly, for all supplies are sidetracked somewhere outside, where it will remain till the strike is over. At the same time shippers and retailers have managed to keep some business going and are even delivering some coal. The weather has not been up to normal warmth, so that natural gas gave out, much as it used to do in zero weather. Some furnaces that were refitted for gas when the prohibited period passed, had to be restored to coal-burning.

#### TORONTO

Receipts very light owing to railroad strike.—Dealers refusing orders.—Bituminous increasingly scarce.—Industrial plants facing crisis.

Owing to the railroad strikes in the United States coal has only been received in very small quantities since April 7. The domestic demand was largely increased by the unseasonably cold weather, but dealers owing to the shortage were unable to accept orders except in cases of emergency.

Bituminous is increasingly scarce but so far the industrial plants have been kept in operation though unless a speedy improvement takes place it is feared that many will have to close down, as a crisis is rapidly being reached.

Quotations for short tons are as follows:

Retail—	
Anthracite egg, stove, nut and grate.....	\$14.00
Pea.....	12.50
Bituminous steam.....	12.50
Domestic lump.....	12.00
Canal.....	14.00

#### CLEVELAND

Movement of coal into Cleveland virtually stopped on April 10, the two chief coal roads of Cleveland being the hardest hit by the strike.—Biggest stock piles in the district, at the outset of the strike, promised only two weeks' operations. Spot coal prices appear ready to soar.—First lake coal cargo of the season is on its way to Lake Michigan.

Bituminous.—Practically no No. 8 coal has moved into Cleveland or northern Ohio

since April 10. Although some improvement is noted in the strike situation on the Pennsylvania, New York Central and Erie railroads, no wheels are turning on the Baltimore & Ohio while the Wheeling & Lake Erie's sole crew is composed of office employees. Since the last two roads are the city's chief coal roads, the movement has practically ceased. A fair tonnage of No. 8 coal, estimated from a week's to ten days' supply, is on track between southern Ohio and Cleveland, and will be moved into the district once railroads again operate.

But the real pinch is looked for about ten days after the strike has been ended. Movement of empties toward the mines has come to a dead stop. The result is No. 6 and No. 8 district mines are operating at from 10 to 15 per cent of capacity. Were the strike to come to an end immediately—and the outlook for a long or short strike is about equal—operations at the mines for the remainder of April will be dangerously low, operators fear. Industrially, coal is the chief factor in the strike, and when present supplies are exhausted operations will cease.

Contracting has been almost completely checked by the strike, as operators are more uncertain than ever of their production over the remainder of the year. The longer the strike lasts the fewer are the chances that the present contract levels of \$3.25@\$3.50 f.o.b. mine, will sag in the latter part of the summer, operators declare. To date most of the contracting has been done at around \$3.25, f.o.b. mine, for No. 8 slack and mine-run. In one instance \$4 is reported done on contract.

**Anthracite and Pocahontas**—These grades, like bituminous, have been shut off by the strike, but the effect is scarcely noticeable. Slightly better demand is reported for anthracite, with which dealers' yards are heavily stocked. On Pocahontas, dealers are about three weeks' behind in deliveries.

**Lake Trade**—Two Great Lakes freighters, one laden with bituminous coal and the other with anthracite, are forcing their way through the ice at Mackinaw, bound for Lake Michigan ports. The anthracite cargo will go to Milwaukee; the bituminous cargo will be split among Green Bay, Sheboygan and Manitowoc. Bituminous coal is acutely short at Lake Michigan ports and some lake freighters wintering at Manitowoc cannot move until they are coaled.

Prices of coal per net ton delivered in Cleveland by dealers are:

Anthracite—Egg, \$12.20@\$12.40; grate, \$12.20@\$12.40; chestnut, \$12.50@\$12.70; and stove, \$12.50.

Pocahontas—Shoveled lump, \$10.50; and mine-run, \$9.25.

Domestic bituminous—West Virginia splint, \$8.75; No. 8 Pittsburgh, \$7.75; Millfield lump (formerly Coshocton lump), \$8.50; Cannel lump, \$11.00.

Steam coal—No. 6 and No. 8 slack, \$7.50; No. 6 and No. 8 mine-run, \$7.50; and No. 8 2-inch lump, \$7.75.

#### DETROIT

With shipments cut off by the railway strike, Detroit experiences serious coal shortage.

**Bituminous**—Once again, Detroit is being subjected to a policy of rigorous conservation of fuel. This situation is brought about by the strike of railway switchmen, which has cut off practically all shipments of coal into the city, as well as other freight. The cutting off of railroad transportation facilities came at a time when neither the steam-coal users nor the retail dealers had much stock on hand, as shipments since termination of the mine strike had lacked sufficient volume to make possible the restoration of depleted reserves, and at times were scarcely adequate to meet requirements for current consumption.

With a shortage virtually existing, the railway strike quickly brought the city into difficulty. The Detroit Edison Co. found it necessary to discontinue power service to all industrial plants, April 12, with the exception of those manufacturing food products, to conserve its current as far as possible for the use of homes. The company has only a few days supply of coal. The Detroit City Gas Co., also was caught with short supply and has appealed to customers to avoid unnecessary use of its product, warning them also against using gas for household heating purposes.

**Anthracite**—Few of the retail yards have been able to fill orders for anthracite. Shipments prior to the railway strike were light and stocks on hand are about exhausted. Though still uncertain as to the prices for the year, some of the dealers are placing orders to make sure their customers requirements will be safeguarded.

**Lake Trade**—Owing to the railway strike, loading of coal for the lake trade is vir-

tually at a standstill. The steamer "William A. Reiss," leaving Huron Ohio, April 15 for Lake Michigan ports carries the season's second cargo.

### Middle West

#### MIDWEST REVIEW

Stories are beginning to come in from some of the Middle West states that a number of manufacturing concerns and public utility plants are closing down, and throwing men out of work, on account of the coal shortage.

It can be seen from the above that the market for coal is very strong, and growing stronger every day. Illinois and Indiana operators are continuing to keep their prices at very fair levels, in fact we do not know of any advance over the price for Illinois and Indiana coals as published in these columns a few weeks ago.

Operators have had an opportunity, in spite of poor running time, to figure just how much the increase granted the miners will influence the selling price of their coal, and, therefore they have closed some contracts with their preferred customers. Operators and wholesalers alike, however, are not seeking new business, but merely renewing old contracts that expired March 31. Contract prices are ranging very closely around the April circular prices given the trade by the operators during the first week of April. Some railroad contracts have been closed, but not many.

During the last week there have been numerous small and ineffectual strikes reported in the producing fields of Illinois and Indiana. These strikes in nine cases out of ten, arose from some trivial situation which meant nothing much either to the operators or to the men themselves, except that it indicates the general spirit of unrest which is prevalent in this territory among practically all labor groups. This spirit of unrest has permeated the wholesalers as well as the operators and consequently is felt by the buying public who are extremely nervous over their coal supply, and are doing all possible toward making their purchases early in the season.

#### CHICAGO

Coal yards on the Illinois Central and the Chicago, Burlington & Quincy R.R. were lucky in receiving some fuel this week.

This is also true of yards on any of the other big coal carrying roads coming into Chicago. Those, however, who operate retail yards on non-coal roads have had to discontinue business for the time being.

The writer was in this yard, on April 20, and all of the coal left in the yard was represented by a small pile of anthracite, about two tons, which was being closely watched by the owner of the yard. Other gangs of workmen in and about the yard were salvaging coal dust and screenings and loading it into the wagons to deliver it to their customers. The switchmen's strike is most certainly far reaching.

A number of manufacturing plants in the city have been forced to close down because they have received no coal, and unless the strike is settled definitely and completely very shortly, other plants will have to close, thus throwing more men out of work. The rebel switchmen are rapidly losing ground as they are very unpopular, first, with the regular unions, and, second, with the general public. In addition to this countless laborers who have been thrown out of work feel that the switchmen have been extremely selfish in their demands.

#### ST. LOUIS

Railroad strike has suspended work in almost the entire field.—A little tonnage produced and railroads taking it.—Local conditions critical.—Prospects of conditions easing up, however.

Practically every railroad in the St. Louis district has been hit by the strike of the yardmen who took with them much force of the other crafts. With the exception of the Missouri Pacific all lines were abandoned by their yard crews at the beginning. The Missouri Pacific have a few crews remaining at work and the condition as the week ends shows improvement on other roads. For a few days officials of the Terminal and office employees took care of switches and handled a few cars of perishable matter, as well as coal for plants that had to have it.

At the end of the week a few crews went back on practically all roads, but this had not helped the coal tonnage to any extent, other than to move what was in the terminals.

In the Standard district the mines on the St. Louis, Troy and Eastern worked a little every day. This coal was brought to East

St. Louis on their own road, the trains manned by their office help who unloaded it at their yards, where it was transported to St. Louis in trucks and wagons.

At a few other points in St. Louis where there was coal the dealers and industrial plants managed to get to it, but in a general way the railroads grabbed most of the coal in sight.

On the Mobile & Ohio, Illinois Central, Vandalia and Baltimore & Ohio a mine here and there worked a day or two, loading railroad company coal. On the Illinois Central a little coal was shipped on commercial business south. In the Mt. Olive field the Illinois Traction System worked their line every day bringing their coal into St. Louis. There is no strike on this road.

#### MILWAUKEE

Cold weather makes a lively coal market.—Little to sell.—Pea anthracite advanced 50c. per ton.—Railroad strike hampers receipts.

Because of a scarcity of supplies of all kinds, the coal market at Milwaukee is very unsatisfactory. A continuance of raw, spring weather increases the number of empty bins daily, and the demand from householders grows correspondingly urgent. The inflow of rail coal was meagre enough before the strike began, but now there is practically no coal coming. A strike of coal handlers at several of the yards still further complicates the situation.

No boats have arrived as yet and the outlook in this respect is not promising, as the ice in the Straits of Mackinac shows no sign of weakening. One steamer with 9,000 tons of anthracite was forced to winter in the Straits. This cargo should be the first to arrive. Last year the first cargo was received on April 20, and by the end of the month 59,535 tons of anthracite and 92,652 tons of soft coal had been unloaded on the docks. Pea anthracite has been advanced 50c. per ton, but prices of all other grades of coal continue the same.

### Pacific Coast

#### SAN FRANCISCO

Prices advance.—Further increases expected by some.

The expected has come to pass, following the increase in the wages to miners awarded by the President's commission and dealers here have been notified by the operators of Utah and Wyoming of an advance in price from \$3.65@\$4 f.o.b. net ton, wholesale, on stove and lump coal at the mines. Whether or not a further raise will come after the summer lull in business is a deep puzzle to dealers.

Hopes are held out by the more sanguine of the fraternity that things will be soon be stabilized, both as regards the operators on the one hand, and the public on the other. Under present conditions, dealers are very much "up in the air." Little effort is being made for consumers to put in stocks this summer for the winter. For domestic use, bituminous prices from Utah and Wyoming, f.o.b. net ton, are:

Stove, \$4; Lump, \$4; Bunker price, \$13.55.

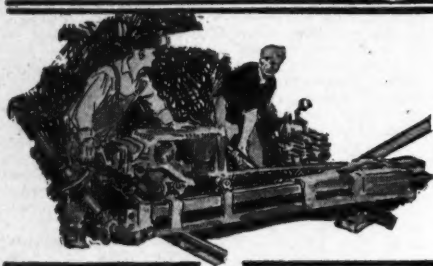
### Coke

#### CONNELLVILLE

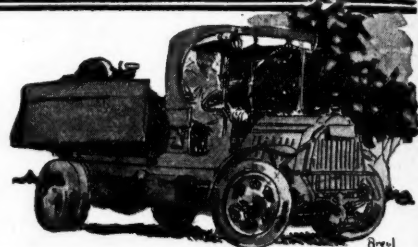
Connellsville coke market has been at a standstill, there being no coke to sell or buy.

While the rail strike was strong at the beginning of last week there was a fair supply of empties, largely placed Sunday, with some cars held over from the previous week. There was full drawing in the region Monday, and some drawing on Tuesday, with cars left over, but afterwards there were no empties. As a rule operators had a change to recharge their ovens and put them on the lightest possible draft so as to hold the charge. By skillful operation the charge can be held about a week and still produce fair coke.

The coke loaded moved only to sidings or railroad scales, but shippers have received a good many weights, showing that some coke did reach yards. A fair movement of empties is expected to follow immediately the ending of the rail strike, also good dispatch to furnaces since the railroads realize that their iron and steel freight business hinges upon their getting the blast furnaces in operation promptly. Practically all the blast furnaces dependent on Connellsville coke are banked, also quite a number dependent on byproduct coke, as the byproduct ovens had little coal in stock received scarcely any since the rail strike started.



## COAL AND COKE NEWS



### Charleston, W. Va.

**Railroad Strike Creates Serious Situation in the West—High Volatile Delayed—Smokeless Reaches Tide—Contracts Being Placed**

The most serious situation which confronted the coal industry in this section of the state and in fact throughout the length and breadth of the Chesapeake & Ohio R.R. system, as the week ended the tenth drew to a close, was the railroad strike in the West, which was materially affecting western coal shipments, through numerous embargoes and which was at the same time affecting the coal supply.

The strike not only shut off the movement of coal west of Russell, Ky., on the Chesapeake & Ohio, and west of Columbus on the Kanawha & Michigan and Toledo & Ohio Central, but also prevented east-bound cars from passing through the western gateways.

During the greater part of the week the car supply was under rather over 50 per cent. Production was materially reduced in this area with no prospect of any immediate improvement, at least until order had been restored in connection with the strike of railroad trainmen.

#### Unfortunate Traffic Interruption

Interruption to traffic came just at a time when producers were making preparations to begin shipments to the Lakes. Inasmuch as nearly all gateways leading to the Lakes were embargoed, insofar as shipments from West Virginia were concerned, no attempt was made to initiate Lake shipments. It had been hoped that when Lake shipments were begun they might tend to some extent to remedy the car shortage, inasmuch as cars would have a short distance to travel in making a round trip.

The larger proportion of high-volatile coal was moving westward, so it will be seen just what the barrier at Russell and Columbus meant to the West Virginia coal trade. Smokeless coal originating at Chesapeake & Ohio mines was for the most part moving eastward to tidewater, so that the strike had not until the close of the week exerted any perceptible effect on such shipments; early in the following week with the strike spreading, it was anticipated that smokeless coal for tidewater would be to a large extent embargoed.

It is realized by operators that tidewater pools are essential in order to insure prompt dumping of coal, yet there are many producers who are reluctant to see their coal lose its identity, so that there is some opposition to the continuance of the tidewater pools.

#### Kanawha Coal Fails to Reach Destination

Ground was lost by Kanawha mines, during the week ended the tenth, owing to an extremely poor car supply, in comparison with the production of the previous week. While fully two-thirds of the Kanawha output was being shipped to western markets little of such coal was reaching its destination after the middle of the week owing to the embargo at Russell and at Columbus applying to shipments off the Kanawha & Michigan.

It was believed, after careful inquiry, that about 65 per cent of the year's output in the Kanawha field was under contract by April 10, \$4.00 a ton appearing to be the prevailing price for run-of-mine.

Although faced with a continued shortage of cars, during the week ended the tenth, New River mines managed to secure more empties than the adjoining Kanawha field, possibly because of a larger movement of empties from the East. Even though receiving a larger share of empties, the supply was still on a lower level than during the previous week. Mines were still forced to be content with less than a 50 per cent supply of cars. The period ended the tenth marked an increase, to some extent at least, in the volume of export tonnage from the New River field,

though it was stated by some operators that export shipments were being halted somewhat by slowness in dumping at tidewater. It is also believed that more contracts for New River coal were completed during the week, with a view to relieving uncertainty as to prices. While of course the embargo at Russell, Ky., affected New River shipments somewhat, it was not to as great an extent as was true of coal from high-volatile fields.

### Bluefield, W. Va.

**Norfolk & Western Recovers from Clerks' Strike Only to Meet Switchmen Trouble—Little Coal Goes West—Eastern Shipments Fair**

Inasmuch as the Norfolk & Western was slow in recovering from the effect of the clerks' strike, production in the southern part of the state was still about on a par with that of the previous week, mines being short of cars for fully half the week. Indeed it was not until well on toward the end of the week that the supply of empties was at all adequate, so that production did not reach even the swing to which it had been accustomed during weeks antedating the strike.

There had been a decrease in all districts served by the Norfolk & Western during the week ending the third, of approximately 200,000 tons. In the first place it required some time to prepare engines for operation, the fires having been banked in many locomotives when it was believed the strike would be prolonged. Next, the run of empties from the West was slow in reaching normal, owing to the fact that cars originally intended for the Norfolk & Western had been sent elsewhere during the strike.

On the other hand, the flow of empties from the East was not so greatly affected, so that there was a larger supply from that source than from the West. Still another factor interfering both with the car supply and with the movement of coal, in the week ended the third, was the switchmen's strike.

#### Embargo and Strike Stop Shipments

Inasmuch as there was no flow of empties through the usual channels, and inasmuch as the Norfolk & Western had placed an embargo on coal movement west of Columbus and Cincinnati, of course there was an accumulation at those points and no empties were being received from sections west of those places.

While it is anticipated that the car supply will show improvement under normal conditions, especially as the season advances, for the time being at least mines on the Norfolk & Western are running far behind schedule for the reasons assigned.

Pocahontas and other points on the Norfolk & Western were the meccas for numerous buyers during the week ended the tenth, there being manifest an insatiable demand for coal. While a large number of contracts have been consummated since April 1, and while a considerable part of the year's output is now under contract, deliveries will be made at prices in keeping with the desire of producers to hold prices down to a level commensurate with production costs plus a reasonable profit. On such a basis numerous contracts calling for the delivery of large tonnages have been closed.

There was during the first ten days of April a growing demand for export. It was possible to meet only a part of such demand owing to the continuance of the permit system, the shortage of cars and inability to load ships fast enough. Owing to the heavy export demand and the short route to tidewater, the tonnage left for Western markets, in so far as could be learned, was comparatively small.

No progress was made by Pocahontas producers in catching up with the demand for their product in the week ended the tenth, there being a decided dearth of cars in the field, especially during the first half

of the week when officials of the Norfolk & Western were striving to restore conditions to normal following the strike.

To further complicate matters, just about the time transportation conditions were beginning to take on a normal semblance, the switchmen's strike closed many western gateways to coal from the Norfolk & Western.

There was for the reasons assigned, therefore, not more than a half week's production in the entire Pocahontas field. Under existing conditions production and loss is now about a "fifty-fifty" proposition.

Coal loading in the Tug River field, during the week ended April 10, reached only 55,450 net tons, a decrease of no less than 27,250 tons, as compared with the output for the week ended March 27. Without having an opportunity of recovering from the effects of the labor trouble initiated at Roanoke last month, the outlaw switchmen's strike at Chicago had spread to the East quite rapidly, and, during the period ending the tenth, was affecting Portsmouth, Kenova and Williamson.

#### Empties Tied Up in the West

On the tenth the Norfolk & Western put into effect a strict embargo on all shipments West, owing to the inability of the road to handle coal in that direction, and by the thirteenth absolutely no empties were being received through the western gateway. The absence of the Western car supply just about cut Tug River production in two, empties received from the East being apportioned and distributed to the western limits of the railway system. There was absolutely no difficulty in handling to the East all coal that could be mined in fields of the Norfolk & Western under a limited car supply.

The Williamson field was affected to as great an extent as other fields depending upon the Norfolk & Western for transportation facilities, and to make matters worse, switchmen and yardmen employed at Williamson joined the ranks of "outlaw" strikers on Wednesday, April 14, making it certain that there would be a serious reduction in production before the end of the week; the output having suffered quite appreciably, during the week ending April 10, for reasons already described in connection with conditions in the Tug River and Pocahontas fields.

Production in the Winding Gulf area was somewhat larger than usual, during the period ended the tenth, owing to a slight increase in the number of cars available. However, Winding Gulf mines were being affected during the following week by the strike which was expected to cut down the district's output. A large part of the district's production was reported as being under contract for the present coal year.

### Huntington, W. Va.

**Car Shortage Serious in Logan Field—Little Coal Under Contract With Lake Season Opening—Strong Export Demand**

Production was seriously retarded in the Logan field, during the week ended April 10, because of a continuance of the shortage of cars, with which the mines of the field have been afflicted since the first of the year. There has been during recent weeks a car shortage loss of not less than 225,000 tons every week, and in the week ended the tenth, the loss was just as serious as it had been during previous weeks of the year, it seemingly being impossible to boost production above 175,000 tons a week.

The car shortage was even more pronounced, during the week ended the tenth, than it had been in preceding weeks; the production for the entire week reaching only about 160,000 tons. As showing just how serious railroad disabilities have proved to be in the Logan field, a total of 1,008,525 tons were lost through that source alone during the month of March, as

against only 768,953 tons produced here during the same period. In other words, the car-shortage loss for the month of March in the Logan field amounted to 53 per cent of the potential capacity (1,801,322 tons) of the entire field.

There was at the end of the week ended April 10 quite a considerable tonnage of the Logan region still not under contract, it was stated, operators awaiting final decision on the wage scale in various non-union fields. However, it was expected that as the season advanced, progress would be made in the closing of contracts. Comparatively little coal for the Lakes was under contract, however, although it was rather anticipated that there would be a large movement of fuel from the Logan region to the Lakes during the season.

There was a pressing demand from export sources for Logan gas and splint, although a larger proportion of Logan fuel was being shipped to Inland West markets than to tidewater, despite the fact that export permits were not so hard to secure. However, the railroad strike necessitated, toward the end of the week, the cessation of shipments from the field to many of the western markets, having a tendency to drive more coal eastward to tidewater.

The embargoes, which prohibited a large part of the western movement, also made it impossible to begin the shipment of coal to Lake points, even as a part of numerous spot orders pouring into the field.

According to figures compiled by the Chesapeake & Ohio Allotment Commission, there was little difference in the amount of coal handled by that road during the week ended April 3 and during the week ended April 10, there being 81 cars more moved during the last-named week than during the previous one, the total gain amounting to 4,050 tons; total loadings for the week ended the tenth being 11,037 cars, equivalent to 551,850 tons.

### Fairmont, W. Va.

**Delay in unloading coal at Curtis Bay.—Embargo cripples shipments to tide.—Lake season starts.**

Northern West Virginia operators were principally concerned in the week ended the tenth by the failure of the railroads, over which their coal was shipped, to function at tidewater piers, necessitating an embargo against shipments to all tidewater points except Port Richmond. As Curtis Bay is the principal tidewater terminal, to which coal from the Fairmont region is shipped, the embargo, coming just when it did, seriously interfered with arrangements made by the operators of nearly all northern fields.

There had been a steady growth in the volume of coal shipped to Curtis Bay and the tonnage to that point (much of it for export) was reaching fairly normal proportions. The fact, however, was that when the Curtis Bay shipments did reach a large tonnage, the Baltimore & Ohio was unable to handle it, and found it necessary to embargo further shipments. This was not particularly pleasing to operators who had been assured by Federal Manager Galloway a few months ago that the road would like to be tested as to its ability to handle tidewater coal at Curtis Bay.

It was stated, however, that the delay in unloading coal at Curtis Bay was due to a breakdown in the unloading facilities. Right on the heels of an embargo as to eastern shipments came the embargo on shipments of coal to certain western markets, although the effect of western embargoes was comparatively insignificant during the week ended the tenth. However, it was generally believed that there might be serious interference with Lake shipments if the strike should spread much further.

### Improvement in Car Supply

Taking northern West Virginia fields as a whole, the car supply was somewhat better than for the previous week, although not averaging much over 50 per cent after the large run of cars for Monday and Tuesday had been exhausted. Mines on the Monongahela R. R. enjoyed a larger run of cars than has been true for many a month, the supply being almost equal to full requirements throughout the week. No doubt this was the result of a special effort of the new executive of the road to improve the service.

At the rate at which tidewater shipments were being made from the Fairmont region at the beginning of the week, a new high-water mark for tidewater tonnage would probably have been established, more than 600 cars of coal having been started on their way to Curtis Bay Monday and Tuesday. When the embargo was clamped on, it put an end to the bulk of tidewater ship-

ments, although innumerable vessels were riding at anchor at Curtis Bay.

Two large consignments of coal from northern West Virginia mines were made to the Lakes, during the week ended the tenth, the shipments in question being the first of the season, it is believed. This coal so shipped was from the mines of the Consolidation Coal Co.

### Norton, Va.

**Southern Railway resorts to assigned car practice.—Coal coked to relieve car shortage.**

The Virginia fields were suffering heavy losses during the week ended April 10 through a car shortage, while at the same time many mines in the fields of this state were placed at a serious disadvantage, because of the fact that the Southern Ry. was resorting to the assigned car practice in order to obtain fuel; in fact this road was characterized as the worst offender in the South in that respect.

While confiscation of coal had largely ceased, the Southern Ry. was falling back on the assigned car system to achieve the same end. The car system of this road was denounced as being extremely unsatisfactory, it being pointed out that the policy of the Southern Ry., in favoring certain mines (furnishing it with fuel) with a preferential car supply, was working a hardship on the small producing mines.

For the week ended the tenth, the output in the Virginia fields had been reduced to 90,000 tons, the loss from a car shortage running up to 75,000 tons. In other words there was a 40 per cent loss from a car shortage alone, production being, manifestly, only 60 per cent of potential capacity. Mines managed to go ahead with production, over and above that made possible by a limited car supply, through coking in all 37,258 tons.

### Ashland, Ky.

**Northeast Kentucky Output Gains.—Switchmen's Strike Sends Coal to Tide.—Private Ownership of Coal Cars**

Gains were recorded in the output of the northeast Kentucky field for the week ended April 10, the output reaching 54 per cent of production or nearly 145,000 tons, out of a possible full-time capacity of 265,000 tons. The gain scored over the previous week's production amounted to 10,000 tons and was principally due to a somewhat improved car supply on the Chesapeake & Ohio; mines on that road being operated about 3½ days out of the six, with mines on the Louisville & Nashville able to make only 2½ days, or less than 50 per cent of normal.

Production in fact during the period referred to was about on a par with the best week so far during the present calendar year, and a further growth in the output was looked for, unless the switchmen's strike in the West should affect transportation conditions. During the same period of 1919, the output for the field was 117,000 tons, that being about 20 per cent below the 1920 production.

Even though there was not a full car supply and, therefore, no special reason for a labor shortage, the loss from lack of men at all the mines in the district reached 10,000 tons. This increase in the tonnage loss from a shortage of labor is believed to be due to an exodus to the farms on the part of many miners, who follow mining during the winter months only. There is little chance of the miners, who have left the mines for their farms, returning during the summer season, especially if an inadequate car supply makes for irregularity of operations and no opportunity to work.

With railroad officials pessimistic as to any improvement in the car supply, it is not generally anticipated that there will be any decline in prices in the near future; that belief only having been confirmed at a meeting of Lake shippers at Cincinnati on April 8, when railroad officials held out no hope for any improvement in transportation facilities.

The belief was quite generally entertained by northeast Kentucky operators that the strike of switchmen would have the effect of driving coal eastward to the export trade, especially in view of the fact that Kentucky operators are securing much export business and have been shipping a generous tonnage to tidewater.

Of more than passing concern to northeast Kentucky operators was the question of private ownership of coal cars and its effect on the general car distribution. It was expected that that particular question would receive attention at a meeting at

Huntington, on April 13, between coal operators and the executives of the Chesapeake & Ohio. Impetus has been given to the development of new mining properties by favorable weather conditions and under such conditions a number of new companies hope to be able to begin operating before the lapse of many months, although carriers are unable to take care of existing operations.

### Birmingham, Ala.

**Corona Coal Co. Secures Injunction Against Southern Ry.—Coal Car Discrimination Case**

A temporary injunction restraining the Southern Ry. from discriminating in the matter of furnishing coal cars to the Corona Coal Co., has been granted here by Judge Dan A. Greene in the Circuit Court, in a case of the Corona Coal Co. against the Southern Ry.

The injunction restrains the Southern Ry. from any practice working a discrimination upon the complainant in the supply of coal cars, according to the just and reasonable rating of the complainant's mine, as ascertained and promulgated by the respondent for distribution of cars during times of car shortage.

The injunction as granted by the court also restrains the respondent from ordering or enforcing a preferential distribution of cars to the Southern subsidiary, the Railway Fuel Co. or others, or any distribution of coal cars in violation of the provisions of Subdivision 12 of Section 402 of the Transportation Act of 1920.

The petition for the injunction was filed by attorney Johnson and Cocke representing the Corona Coal Co. The bill alleges that the complainant is a corporation organized under the laws of the state of Delaware, but maintaining general offices in Birmingham, and that the respondent is a corporation organized under the laws of the state of Virginia, and is engaged in a general transportation business. The respondent is alleged as a common carrier to be subject to the Transportation Act of 1920.

According to the allegation of the bill the Southern Ry. is the only direct connection for the transportation of the output of the Corona Coal Co., and that complainant is exclusively dependent upon the Southern Ry. for its car supply and initial transportation. For some time there has been an acute car shortage, and the complainant alleges that it has not been furnished with its full requirement of cars and that, furthermore, other mines have not been furnished their full requirement of cars.

The complainant further contends that it has outstanding contracts for its output, and that the failure of the supply of cars tends to disorganize and dissatisfy its employees, forces its mines to suspend, causes losses to its customers, through demurrage and delay in receiving fuel at the proper time.

The petition prays that a temporary injunction be issued against the defendant restraining it from enforcing the rules referred to and from continuing its discrimination against the complainant.

### PENNSYLVANIA

#### Anthracite

**Hazleton**—The heavy rains of the first part of the week, ended April 10, failed to make much difference in the water levels of the flooded mines in this section. The region was just recovering from the effects of the previous heavy rains and thaw when the recent rains came. The reports state that the water has made little material gain on the pumps.

On April 8 the Hazleton and Mahanoy division of the Lehigh Valley R.R. moved 650 railroad coal cars from the mines, against 128 cars on Easter Monday. The record for the sixth compares favorably with the war record from the same district, which was about 700 a day. Even with the big tonnage the coal companies cannot meet the demand and the Lehigh Valley Coal Co. has just put into operation again a large locomotive crane loading steam sizes from storage.

**Wilkes-Barre**—A complimentary dinner was given to Truesdale colliery officials at Hotel Redington, Wilkes-Barre, on a Saturday evening recently, by William W. Ingalls, vice president and general manager of the Delaware, Lackawanna & Western company. Truesdale colliery is in Hanover Township, in about the center of old Luzerne Grove, near the end of Wilkes-Barre & Wyoming Valley R.R., Askam and Warrior Run branch.

The plant was named in honor of William

H. Truesdale, president of the Delaware, Lackawanna & Western R.R., in 1889, and had led all the collieries in the anthracite field in coal production from 1913 to 1919, inclusive.

The following guests attended the dinner: John Allen, John Bobeck, James H. Brown, Dr. C. E. Bennett, James Bryan, Martin Brennan, Patrick Blewitt, Joseph Chervock, James Connell, Wayne Caruthers, Ted Corrigan, S. D. Dimmick, Frank Dobrowski, Edward P. Davis, P. H. Dever, John Driscoll, Arthur Davis, William T. Dixon, John H. Davis, Anthony J. Early, Thomas J. Evans, Herman Fruehan, Joseph Foley, John Frew, Raymond Gottshall, Frank Gleason, David Girvan, Charles Gallagher, Hugh E. Hughes, Joseph Hocken, Harry E. Harris, Frank Hildebrand, Cyril Hammonds, William W. Inglis, John Ingram, William L. James, John R. James, Frank Kishel, Frank H. Ketrick, George Keller, Robert E. Love, Thomas H. Lewis, Patrick Lenahan, Thomas P. Long, David Lloyd, Frank Law, Samuel Mayers, John Mould, William Mullahey, Joseph Motley, William McHale, Eleazor Morgan, Karl Miller, Con McCole, Bernard McKee, N. N. Nichola, Stanley Nowak, George F. O'Hara, Henry Ormanowitski, Edward S. Powell, George Phillips, William F. Powell, John Rapadowski, Joseph Ruddick, William Roachford, John O. Richards, Joseph Richards, Joseph L. Reynolds, M. L. Roper, Bradford Samson, Frank H. Samson, Joseph Schappert, Patrick A. Shovlin, Martin Stamer, Charles Sperry, James Sweeney, Harry Smith, William S. Taylor, William B. Thornton, Zigmund Tomkiewicz, Frank Trimble, Ivor Vincent, H. M. Warren, William E. Walters, William R. Williams, Owen S. Williams, William E. Watkins, John Williams and John Walsh.

#### Bituminous

**Chambersville**—The Peterman mine of the Eliza J. Smith & Brothers Coal Co. here has been sold to the Clark Coal Co., of Barnesboro. The mine was opened up in 1915 and has a considerable development with a daily capacity of 300 tons. The sale price has not been made public.

**Johnstown**—The Penn Public Service corporation, operating in Cambria, Indiana and Somerset counties, will start on May 1, the extension of the high-power lines, arranging for a length of 18 miles of wire. The line will extend from the southern limit at Hooversville, Somerset County, to the northern limit at Hellwood, Indiana County. The wires will be carried on 200 steel towers. The lines should be in operation by October when the new power plant at Seward, which will generate 40,000 kilowatts as the minimum, will be completed. This line passes through some of the most active coal territory of western Pennsylvania.

**Indiana**—The largest class of applicants for certificates of qualification for bituminous mine foremen and fire bosses ever taking these examinations here, was in attendance recently when the examining board of the Twenty-fifth Bituminous district, composed of Thomas S. Lowther, inspector and chairman, W. B. Wardrop, representative for the operators and D. J. Jones, representative for the miners, held the annual examination. There were 59 applicants for second-grade foremen, 48 for first-grade foremen and 29 for fire boss. Several of the applicants were young men who had seen service in France in the world war and are now working themselves up in the mining industry.

**Pittsburgh**—The bi-monthly meeting of the mechanical section of the Engineers' Society of Western Pennsylvania was held on the evening of April 6 in the auditorium of the Union Arcade Building. E. B. Bailey, president of the Bailey Meter Co. of Cleveland, O., read an interesting paper on "Power Plant Instruments and Meters." Various meters that show the relation between the steam inflow and the energy input, as well as other types, made clear the importance of this type of installation around power plants. The paper was illustrated with lantern slides and actual chart records of performance.

A meeting of 160 members of the American Institute of Mining & Metallurgical Engineers, who are located in the Pittsburgh district, will be held on April 30 in the auditorium of the Pittsburgh station of the Bureau of Mines. Sentiment in favor of a local chapter of the institute is the cause of the meeting, at which time a decision will be reached as to whether or not a Pittsburgh branch will be formed.

The American Association of Engineers, a newly organized national society, met in the auditorium of the Bureau of Mines, at this city, on April 16. The meeting was an open one and many engineers in the Pittsburgh district attended. The principles and

plans of the society were outlined in addresses and the possibility of organizing a Pittsburgh chapter was discussed. E. A. Holbrook, superintendent of the Pittsburgh station of the Bureau of Mines, offered the freedom of the buildings to the society members and others. Inspection of the buildings was one of the entertainment features as well as the showing of the Bureau of Mines film, "The Story of Coal."

#### WEST VIRGINIA

**Charleston**—New officers were elected at the annual meeting of the New River Coal Operators' Association held in this city on April 12. C. C. Beury, of Charleston, after a service covering a period of four years as president of the association, declined reelection. The roster of new officers includes: G. H. Caperton, of Charleston, president; S. A. Scott, of Macdonald, vice president; T. L. Lewis, of Charleston, secretary. A special committee was selected by the association, consisting of C. C. Beury and G. H. Caperton to work in conjunction with like committees from other districts in an effort to secure a better car supply.

Much concern is being manifested by operators in southern West Virginia, over the increasing number of privately owned coal-carrying equipment. Extensive use of such cars, it is claimed, works a hardship on companies not owning their equipment, particularly on the small producer in that, with so many individual cars in use, it is impossible for many companies to secure an equitable car supply. It is said that the number of individual cars owned by the larger coal companies, by public utility companies and by many byproduct concerns is constantly on the increase. This situation, it is contended by some operators, is becoming serious. It is only a question of time, declares J. J. Ross, president of the Logan Operators' Association, until fully half the motive power of a road, such as the Chesapeake & Ohio for instance, will be required in transporting private coal cars. According to Mr. Ross, it is believed that the number of private coal cars this and other roads are permitted to transport should be limited.

#### KENTUCKY

**Madisonville**—If plans were not changed, the hospital committee of District 23, United Mine Workers, assembled at Central City, Ky., recently. President W. D. Duncan, of District 23, United Mine Workers of America, expected to issue a call for the committee to meet after the wage committee conference was held, and the members should be ready to submit their report by May 15. As soon as the committee outlines its policy, various towns in western Kentucky, who are seeking the proposed \$100,000 miners' hospital, will be visited and inducements these towns offer for the location of the institution will be ascertained. After the committee makes its report, the matter will be in such shape that mine workers' locals can petition President W. D. Duncan to hold a referendum vote of the members of the mine workers. Should the union miners not request a referendum vote, the hospital committee's report will not be acted on until the United Mine Workers' district convention is held which will be in October.

#### OHIO

**Staubenville**—An official investigation will be begun looking into the accident, in which two coal miners were killed and three others injured (one probably fatally) at the LaBelle Iron Works. A motor train carrying miners out of the mine collided head-on with a string of empties. Brief reports of the company attribute the accident to a misunderstanding of signals.

**Columbus**—The Eastern Hocking Coal Co. has filed suit against the Elk Coal Co., of Columbus, for damages in the sum of \$1,369,000, alleged to have been suffered when the defendant "secretly" mined 880,000 tons of coal under the plaintiff's lands in Muskingum County. The action was brought in the Franklin County Common Pleas Court.

Ohio soft coal operators, especially those operating in the Hocking Valley, Pomeroy Bend and Crooksville districts of the state, were much gratified at the news from Washington that the Interstate Commerce Commission is going to help the car supply on the Hocking Valley, the Kanawha & Michigan, and the Toledo & Ohio Central railroads. The mines have been operating at less than half capacity because of car shortage, and numerous complaints were made to the Interstate Commerce Commission. The announcement from Washington was to the effect that orders had been issued to deliver 425 cars per day to the Hocking Valley; 400 cars per day to the Toledo & Ohio Central, and other cars to smaller lines. In the North-

west it is said that railroads hold 43,000 cars in excess of their ownership and it is planned to bring them back to the owning lines.

#### INDIANA

**Clinton**—The Miami Coal Co. has set a new high record for total output in its five Clinton mines during the month of March. The total was 216,585 tons, as compared with the former record of 180,000 tons for one month. The average number of days the five Miami mines worked in the month was 24. Miami mine No. 8 produced 63,133 tons, the largest output in the field for the month. The Miami company ranked second in Indiana in last year's output; the Vandallia Coal Co. was first. The Miami company has discontinued the "drag" or pre-pay day for miners, a system under which the men who get their money in advance pay 10 per cent to the company for the privilege. The company officials say the action is taken in conformity with the recent recommendations of the coal commission. In the days when the saloons were operating, hundreds of miners took advantage of the "drag." Now the "drag" has fallen to less than half the former proportions.

#### ILLINOIS

**Duquoin**—Damage which has been estimated at \$80,000 was done recently in the big storm that swept the Middle Western states, to two coal mines and a coking plant near Belleville, in St. Clair County, north of here. Among the mines damaged was the Senior Coal Co., the entire top works being destroyed, partly by wind and partly by fire, which originated during the storm; the other was the Henrietta mine of the I. X. L. Coal Co., of Edwardsville. In the latter case, the tippie was blown down and the large shaker engine dropped into the shaft, falling 300 ft. to the bottom. The third concern which received unusual damage was the plant of the St. Louis Coke & Chemical Co., which was only built last spring. Fifteen out of the 17 towers at this plant were blown down, some of them being as high as 164 ft. Other mines through this district received minor damages but none so severe as the three noted.

**Benton**—With the exception of the Middlefork mine of the U. S. Fuel Co., every coal plant in Franklin County, Illinois, is at a standstill on account of the yardmen's strike all over the country. The Middlefork mine owns its railroad cars, and is thus able to run, and the cars are taken directly from the mine to their destination. For more than a week the other mines have not been working, and the miners are beginning to chafe under the enforced idleness.

Saline County, Illinois (southeast of Franklin County), operators are pleased over the arrangement recently completed between the Big Four and New York Central lines, whereby the latter agrees to furnish the Big Four a large number of coal cars each day. This arrangement is expected to enable the Saline County mines to operate practically every day. The car supply heretofore has been wholly inadequate in that county as well as all other counties in the southern Illinois field.

#### CANADA

**Toronto**—An important consolidation of steel, coal, shipbuilding and shipping enterprises, promoted by the Dominion Steel Corporation, of Sydney, N. S., is now under way. The proposition for a merger of the Dominion Steel Corporation and the Nova Scotia Steel & Coal Co., which has for some time been under consideration, has, since the acquisition of a large interest in the Dominion Steel by British capitalists, been extended so as to include the Canada Steamship Lines, Ltd., and the Halifax Shipyards, Ltd., with other allied enterprises. The first step, involving the merger of the Dominion Steel and the Nova Scotia Steel, is understood to be nearing completion. Negotiations which have been in progress in Montreal for some weeks are to be continued in New York when a final decision will be arrived at. Expert accountants and appraisers have for some time been at work on the books and properties of the companies involved. When their reports are completed offers will be made to the shipping and shipbuilding companies of the terms, on which their properties will be taken over. The acceptance of these conditions, it is understood, will be little more than a matter of form, owing to the fact that the steel interests are largely identified with the other enterprises. Extensive plans for the expansion of the industries to be included in the merger are being matured, which will require additional capital to an amount estimated at between \$20,000,000 and \$28,000,000, which it is anticipated can easily be raised.

## Personals

**Walter C. Hess**, formerly assistant mining engineer of the Temple Coal Co., of Scranton, has been appointed mining engineer of the same concern to take the place of Geo. W. Engel, deceased.

**Tudor Aston**, superintendent of the Mt. Lookout colliery of the Temple Coal Co., has resigned to go into business for himself.

**Bruce Weir**, superintendent of the North West colliery of the Temple Coal Co., has been transferred to the superintendency of the Mt. Lookout colliery at Wyoming, to take the place of Tudor Aston, resigned.

**James McAndrew** has been appointed assistant superintendent to John Mellow, superintendent of the Lackawanna, Sterrick Creek and North West collieries of the Temple Coal Co., northeast of Scranton.

**D. S. Wolfe**, division superintendent of the Lehigh division of the Lehigh Valley Coal Co., with headquarters at Hazleton, has resigned to become the general superintendent of the McTurk operations in Schuylkill County.

**George Wood**, formerly division engineer of the Lehigh division of the Lehigh Valley Coal Co., has been appointed to the position of division superintendent of the same division. His headquarters will be at Hazleton.

**Fred Holderman**, formerly a mining engineer of the Lehigh division of the Lehigh Valley Coal Co., has been promoted to the position of division engineer of the same division.

**P. Burger, Jr.**, has just been promoted to the position of assistant mine foreman of the Tomhicken colliery of the Lehigh Valley Coal Co., in Luzerne County.

**David Flemming** has resigned as general superintendent of the Colver mines of the Ebensburg Coal Co., at Colver, Pa. Mr. Flemming will remove to Greensburg, Pa., and retire from the active mining industry.

**E. S. Brooks** has been appointed general manager of the Union Pacific Coal Co., with headquarters at Rock Springs, Wyoming, to succeed Geo. B. Pryde, acting general manager, effective April 1. The president of the company is E. E. Calvin, with offices at Omaha, Neb.

**R. L. Rogers**, formerly sales manager for the Chicago, Wilmington & Franklin Coal Co., and until recently with the Clinton Coal Co., has been appointed general sales manager for the Sterling-Midland Coal Co., of Chicago, which has various operations around Duquoin, Ill., and other places.

**William P. Rend**, a son of Joseph Rend, of Chicago, president of the W. P. Rend Coal Co., which operates two large collieries in Franklin County, Illinois, has been sent to these mines by his father, in order that he may learn the business from the ground up. The younger Rend is about 21 years of age, and is said to be taking a keen interest in the mining business.

**M. L. O'Neale**, graduate mining engineer of Columbia University; member of the American Institute of Mining & Metallurgical Engineers; 7½ years superintendent of coal and coke properties in Alabama and West Virginia, and one year superintendent of pyrite mines and concentrating plant in New York, announces the opening, at Morgantown, W. Va., of an office for consultation in matters of mine operation, plant design and installation, examination of properties and reports.

**S. W. Taylor**, formerly president of the Cement Gun Co., Inc., whose main office is at Allentown, Pa., has recently taken over the duties of chairman of the board of directors of this company. **W. J. Roberts**, president of the Traylor Engineering & Manufacturing Co., has been appointed to the presidency of the Cement Gun Co., Inc. Another advancement in the Cement Gun organization is that of **B. C. Collier** to the position of vice president, in addition to his continued duties of general manager.

**W. B. Wardrop** has resigned as superintendent of the Iselin mines of the Pittsburgh Gas Coal Co., at Iselin, Pa., and has removed to Indiana, Pa., where he has purchased a property and will take a much needed rest. **James Patterson** has been placed in charge, temporarily of the Iselin mines. He has been general mine foreman for these mines for several years.

**L. N. Ridenour**, in charge of the manufacturing sales department of the Wellman-Seaver-Morgan Co.'s Akron office, moved his department to the company's general offices at Cleveland, Ohio.

## Obituary

**Roy Hart**, vice president of the Oakland Coal Co., and a well-known figure in coal circles in the Middle West, died recently at his late home from a complication of diseases. He had been in ill health for the past two years.

**W. L. McDonald**, general superintendent of the Mather Collieries since the opening of the mines in Greene County in 1917, died in a Pittsburgh hospital on April 11, after undergoing an operation for mastoid. Mr. McDonald's illness was of but short duration and his death was a distinct shock to many friends in western Pennsylvania and Ohio. He was connected with the coal industry in the latter state before coming to Pennsylvania.

**William R. Martin**, foreman at the Annabelle mines of the Four States Coal Co., in Marion County, W. Va., died on April 14 in the Fairmont, W. Va., State Hospital, from a fractured skull. The day before his death, Mr. Martin was struck by a trap door in one of the mine headings, after it had been rammed by a locomotive and sustained a fractured skull. Mr. Martin who was 36 years of age, leaves a widow and son.

**Geo. W. Engel**, for many years the mining engineer of the Temple Coal Co., died as the result of an attack of pneumonia. His death was a shock to his friends, for while he had been ill for a number of weeks, he was recovering rapidly from his illness, when a sudden change in his condition took place and in a few hours he died. Mr. Engel was born in Fountain Springs, Pa., but for more than twenty years was a resident of the city of Scranton, Pa. He was considered one of the leading engineers in the coal industry in this section of the country. He was often called into consultation with the larger companies of the anthracite regions.

### ELIAS ROGERS

Elias Rogers, a prominent coal operator and merchant, and identified with many other large business enterprises, died on April 11 at his home in Toronto, Canada, in his seventieth year after a few days illness. He was born in Newmarket, Ont., and he purchased the first mines opened in Jefferson County, Pa.; in 1876 he came to Toronto and, in partnership with his brother Samuel, established the business afterward incorporated as the Elias Rogers Coal Co., Ltd. In 1909 he became president of the Crows Nest Pass Coal Co., which under his management rapidly expanded. He was prominently associated with numerous other important industrial and financial enterprises, being president of the National Life Assurance Co.; president of the Electric Light & Power Co., of British Columbia; vice president of the Imperial Bank of Canada, and a director of the Dominion Iron & Steel Co.; the National Trust Co., and the Carrington Air Brake Co.

Mr. Rogers took an active interest in public affairs. In 1887 he was elected to the City Council, and in 1898 was president of the Board of Trade. He was a prominent member of the Society of Friends and identified himself with a number of religious and philanthropic activities. He retired nine years ago from active connection with the Elias Rogers Coal Co., his eldest son Alfred succeeding him as president. He is survived by his wife, four daughters and two sons; his third son Clarence, who served overseas with distinction in the Royal Flying Corps, having been killed in action.

## Coming Meetings

**Chicago Coal Merchants' Association** will hold its annual meeting April 13, at Chicago, Ill. Secretary, A. H. Kendall, Chicago, Ill.

**American Chemical Society** will hold its annual meeting at St. Louis, Mo., April 13, 14, 15 and 16. Secretary, Dr. Charles L. Parsons, 1709 G St., N. W., Washington, D. C.

**National Coal Association** will hold its annual meeting May 25, 26 and 27 at the Traymore Hotel, Atlantic City, N. J. Secretary, W. B. Reed, Commercial Bank Building, Washington, D. C.

**The American Association of Engineers** will hold its annual convention at the Planters Hotel, St. Louis, Mo., May 10 and 11. C. E. Drayer, secretary, Chicago, Ill.

**The Rocky Mountain Coal Mining Institute** will hold its annual meeting in Denver, Col., in conjunction with the National First Aid Meet. on August 20 and 21. Secretary, F. W. Whiteside, Denver, Col.

**National Conference of Business Paper Editors** will hold its next meeting June 4 at the Congress Hotel, Chicago, Ill. Secretary, R. Dawson Hall, 36th St. and 10th Ave., New York City.

**M. O. I. Coal Association** will hold its annual convention June 16, 17 and 18 at Cedar Point, Ohio. Secretary, B. F. Nigh, Columbus, Ohio.

**National Retail Coal Merchants' Association** will hold its annual meeting June 10, 11 and 12 at Detroit, Mich. Secretary-manager, Ellery Gordon, Philadelphia, Pa.

**Kentucky Mining Institute** will hold its annual meeting June 4 and 5 at Lexington, Ky. Secretary, C. W. Strickland, Huntington, W. Va.

**American Society of Mechanical Engineers** will hold its spring meeting May 24, 25, 26 and 27 at St. Louis, Mo. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Chamber of Commerce of the United States of America** will hold its eighth annual meeting April 26, 27, 28 and 29 at Atlantic City, N. J. Assistant Secretary, D. A. Skinner, Washington, D. C.

**West Virginia Coal Mining Institute** will hold its annual meeting June 7 and 8, at White Sulphur Springs, W. Va. Secretary, R. E. Sherwood, Charleston, W. Va.

**American Wholesale Coal Association** will hold its annual meeting June 1 and 2 at Pittsburgh, Pa. Secretary, G. H. Merryweather, Washington, D. C.

**The Colorado Retail Coal Dealers' Association** will hold its annual meeting June 8, at Colorado Springs, Col. Secretary, E. Hopper, Denver, Col.

**West Virginia Freeport Coal Operators' Association** will hold its annual meeting June 3 at Kingwood, W. Va. Secretary, A. T. Carnahan, Akron, Ohio.

## Publications Received

**Coal. The Federal Trade Commission, Washington, D. C. Cost report. No. 2. Pennsylvania—anthracite. Illustrated; pp. 145; 6 x 9 in. Cost of production of anthracite for years 1917 and 1918.**

**Coal. No. 3 Illinois—bituminous. Federal Trade Commission Washington, D. C. Illustrated; pp. 127; 6 x 9 in. This report is the third of the series on the cost of producing coal; covers data for year 1918.**

**Twenty-eighth Annual Report of the Colorado Fuel & Iron Co., of Denver, Col. For the year ended Dec. 31, 1919. Not illustrated; pp. 15; 6 x 9 in. Report to the stockholders.**

**Thirty-Second Annual Report of Bureau of Mines, Mining and Mine Inspection, State of Missouri, for 1918. Not illustrated; pp. 82; 6 x 9 in. Statistical information about the coal, lead and zinc mines of the state for the year 1918.**

**Annual Report on the Mines—1919. Province of Nova Scotia. Department of Public Works and Mines. Halifax, N. S. Illustrated; pp. 74; 5½ x 9½ in. A report on the mines of the province for the year ended Sept. 30, 1919.**

**Ninety-ninth Annual Report of the Board of Managers of the Lehigh Coal & Navigation Co., of Philadelphia, Pa. For the fiscal year ended Dec. 31, 1919. Not illustrated; pp. 26; 9 x 12 in. Report to the stockholders.**

**Transvaal Chamber of Mines. Report. Monthly Analysis of Gold Production in the Transvaal, October, 1919. With Transvaal Output of Coal, Silver, Copper Ore and Tin Ore for September, 1918 and 1919. Not illustrated; pp. 9; 14½ x 20 in.**

**Report of Engineers Committee, 1918-1919. U. S. Fuel Administration, Washington, D. C. Illustrated; pp. 194; 9 x 11½ in. Results of the work of the Engineers Committee of the U. S. Fuel Administration connected with price fixing and costs of coal.**

**Absorption as Applied to Recovery of Gasoline Left in Residual Gas from Compression Plants. By W. P. Dykema and Roy O. Neal. Department of the Interior. Bureau of Mines. Technical Paper 232. Petroleum Technology 53. Illustrated; pp. 43; 6 x 9 in.**

**Experiment Stations of the Bureau of Mines. By Van H. Manning. Department of the Interior. Bureau of Mines. Bulletin 175. Illustrated; pp. 106; 6 x 9 in. Notes about the 11 different field stations of the Bureau of Mines and the work done by them.**

**Waste and Correct Use of Natural Gas in the Home.** By Samuel S. Wyer. Department of the Interior. Bureau of Mines. Technical Paper 257. Illustrated; pp. 23; 6 x 9 in. Practical hints to householders.

**Eighth Annual Report of the State Inspector of Mines to the Governor of New Mexico.** For the year ending Oct. 31, 1919. Not illustrated; pp. 74; 6 x 9 in. Considerable space is devoted to statements relative to time worked and wages paid coal mine employees.

**Coal. No. 2. Pennsylvania Anthracite.** Cost reports of the Federal Trade Commission. Washington, D. C. Illustrated; pp. 145; 5½ x 9½ inches. Data for 1917 and 1918 covering output of practically total anthracite produced; also details of operations of operators producing about half the anthracite tonnage for 1913-1918.

**Boiler and Furnace Testing.** Prepared by Rufus T. Stroh. Department of the Interior. Bureau of Mines. Technical Paper 240. Illustrated; pp. 23; 6 x 9 in. A description of what the author calls the simplest and best way of finding out how efficiently a boiler is working by means of an evaporation test.

**Miners' Safety and Health Almanac for 1920.** Compiled by R. C. Williams. Department of the Interior. Bureau of Mines. Miners' Circular 26. Illustrated; pp. 51; 6 x 9 in. Useful as a calendar and giving information on different diseases and how kept from starting; notes common accidents in mines.

**Geology and Natural Resources of Ruthersford County, Tennessee.** By J. J. Galloway. State of Tennessee Geological Survey. Nashville, Tenn. Illustrated; pp. 81; 6 x 9 in. Report based on survey made in 1915, the purposes of which were (1) to determine the natural resources of the country; (2) study of the geology; (3) study of the soil.

**Results of Forty-one Steaming Tests Conducted at the Fuel Testing Station, Ottawa.** By John Blizard and E. S. Malloch. Canada Department of Mines. Mines Branch. Illustrated; pp. 83; 6½ x 9½ in. Includes the results, and comments thereon, of all the steam-boiler trials conducted at the fuel-testing station at Ottawa, Canada, since this class of work was first undertaken.

**Products, Mines and Facilities of the Hillman Coal & Coke Co.** Main office, First National Bank Bldg., Pittsburgh, Pa. Bulletin. Illustrated; pp. 48; 8 x 11 in. A finely illustrated description of the plants and shipping facilities of the Hillman interests together with maps showing the location of the mines of the company. Interesting historical data about the coal regions in question noted.

**The Industrial Outlook.** By Guy E. Tripp, Chairman, board of directors, Westinghouse Electric & Manufacturing Co. Not illustrated; pp. 15; 6 x 9 in. An address delivered before the alumni of the Stevens Institute of Technology, at New York, Jan. 15, 1920. Takes up the industrial situation from the war to date; shows what labor has done and is now doing. Exposes tendencies of social unrest and necessity to speed up and get down to more productive work again. Excellent reading for the man in the shop and the president or manager in his office; any one who desires an insight into the present social and economic problems, will find in this address abundant material for serious consideration.

## Trade Catalogs

**Anti-Corrosion Engineering.** Distributed by the National Tube Co., Pittsburgh, Pa. Circular. Pp. 4; 8½ x 11 in.; illustrated. A reprint of a short article which appeared in the Jan. 31, 1920, *Scientific American*.

**Jeffrey Shredders.** The Jeffrey Manufacturing Co., Columbus, Ohio. Catalog 259. Pp. 36; 6 x 9 in.; illustrated. Description of the Jeffrey Type "E" swing hammer shredder, for reducing wood chips, bark and other fibrous materials.

**Coal Mining Lubrication — Keystone Lubricating Co., Philadelphia, Pa.** Bulletin 26. Pp. 27; 8½ x 11 in.; illustrated. Some facts about lubrication, around mines in general, and the Keystone system in particular. An interesting story.

**Why Bituminous Coal is Cheaper Than Fuel Oil.** Distributed by Peale, Peacock & Kerr, Inc., North American Bldg., Philadelphia, Pa., and Grand Central Terminal,

New York, N. Y. Pp. 15; 5 x 7½ in.; illustrated. Some statements covering the cost of substitution of fuel oil in plants now operating with bituminous coal.

**MacWhyte Wire Rope.** The Macomber & Whyte Rope Co., Kenosha, Wis. Folder. Pp. 4; 6 x 9 in.; illustrated. An announcement calling attention to the quality of the wire rope manufactured by this company.

**Deming Pumps.** The Deming Co., Salem, Ohio. Catalog 26. Pp. 254; 6 x 9½ in.; illustrated. Bound in cloth. Catalogue is divided into sections, each embracing a certain class of pumps of accessories. The engineering tables and information relating to hydraulics should be useful to dealers in pumps. Hand and power pumps for general service.

**Public Utilities City of Nitro, W. Va.** Distributed by the Charleston Industrial Corporation, operating the City of Nitro. Booklet. Pp. 21; 9 x 12 in.; illustrated. A technical description of the various public utilities of Nitro, erected during the war, and which are now in constant operation. Built for a city of 35,000 people, their tremendous reserves stand ready to be put to immediate use and to serve a community ten times the size of the present population of Nitro.

## Industrial News

**Blackey, Ky.**—The Woodburn Coal Co. is considering plans for the immediate construction of the proposed new coal tippie and bins at its plant, to facilitate operations.

**Cincinnati, Ohio.**—The Callaway Coal Co. has been chartered with a capital of \$25,000, by S. D. Ducker, F. H. Callaway, W. K. Neuding, G. H. Sibbald and R. M. Plympton.

**Bloomington, Ind.**—The Arbutus Coal Co. has been incorporated with capital of \$10,000, with Edgar Fish, George Dodson and T. B. Adams, as directors.

**Eagle Pass, Tex.**—The International Coal Mines Co. is planning to increase the capacity of its local mines. It is proposed to make enlargements and improvements at its plant for this purpose.

**Herndon, W. Va.**—The Monticello Coal Co., recently organized with F. M. Lee as president and general manager, is planning for the construction of about 50 miners' dwellings at its local properties.

**Bramwell, W. Va.**—The Thomas Coal Co. has awarded a contract to the Stevens-Adamson Co., Bramwell, for the construction of a new coal tippie and washery at its local operations. The work is estimated to cost about \$100,000.

**Louisville, Ky.**—A report from Whitesburg, Ky., is to the effect that the Consolidation Coal Co., in the Jenkins-McRoberts field, is offering prizes this year for the best gardens, and best varieties of produce grown by the miners in its employ to encourage home growing.

**Hamden, Ky.**—The Kenmont Coal Co. is understood to be considering plans for the immediate construction of a large new coal tippie, to be used in connection with the development of additional mining properties. The plans also include the erection of approximately 30 dwellings for the miners.

**Chehalis, Wash.**—The Sheldon coal mine on Coal Creek, near this city, has been leased by Bert Hill of Chehalis; A. Hall, of Onalaska, and George Love, of Tacoma. The property has been developed by Olson & Guy, of Tacoma, who had it under lease, and it is now ready to produce coal for market. The lessees will at once enter the local market with their product.

**Clarksburg, W. Va.**—The Late-Kooper Coal Co. has recently been organized under a state charter to operate in the vicinity of Newburg, Preston County. The concern is capitalized at \$50,000. Those principally interested in the new company are: Gordon B. Late, Addie Ruth Late, Joseph Van Zandt, J. Ray Smoot and D. B. Kooper, all of Newburg.

**Henderson, Ky.**—On March 31 the Southland Coal Co., operating the largest mine in Henderson County, secured control of the Mid West Fuel Co. properties, the consideration being around \$120,000. Both mines are within the city limits of Henderson. W. L. Hughes, vice president of the Mid West company, will continue in active charge of the properties.

**Prairie, Ky.**—The Kanawha Elkhorn Collieries, of Buffalo, N. Y., is arranging plans for the installation of new electrical equipment for increased operations at its local mining plants. The company is developing about 4,800 acres in this section with a capacity of about 1,200 tons daily, and the new equipment will include three new gen-

erating units. R. C. Simpson is general superintendent.

**Jeff, Ky.**—The Carr's Fork Coal Co. is having plans prepared for the installation of machinery and equipment for the development of about 3,000 acres of coal properties in the vicinity of Hamden, Ky. Henry E. Bullock, of Lexington, Ky., is president.

**Columbus, Ohio.**—The Northland Coal Co., of Columbus, has increased its capital from \$25,000 to \$300,000 for the purpose of taking over a large tract of 7,000 acres of coal lands in Wayne County, West Virginia, on the Norfolk & Western R.R. The tract has one working mine. It is planned to open three or four more mines and increase the output to about 5,000 tons daily. The offices of the company are in the Clinton Bldg., Columbus.

**Pocatello, Ida.**—The Idaho Coal Mining Co., backed by Vice President Simpson of the Lincoln Trust Co., of Spokane, which is preparing to operate in the Teton basin near Driggs, will open headquarters in this city at once, according to E. H. Clarke, president of the Chamber of Commerce, which has endorsed the coal-mine proposition. The properties are said to contain over 13,000,000 tons of coal and their opening will prove to be a large undertaking.

**Ithaca, N. Y.**—The Morse Chain Co., of this place, announces the change of address of its Greensboro (N. C.) office, which has been moved to Charlotte, N. C., with headquarters in the Commercial Bank Building. George W. Pritchett, the company's southeastern manager, has found this change advisable owing to the increase in the use of Morse chains, necessitating the building of new mills and also increasing the capacity of others. H. E. Matthews continues with the company answering questions and showing Morse drives to all inquirers.

**Duquoin, Ill.**—The Elder-Bixler Coal Co., of Carrier Mills, Ill., southeast of here, has announced a change of location to Harrisburg, Ill., and an increase in stock from \$25,000 to \$100,000.

The Sangamon County Mining Co., has increased its capital stock from \$10,000 to \$200,000 and announces that it will make large extensions on its mining property in the near future.

The Polonia Coal Co., with offices in Chicago, has increased its capital stock from \$110,000 to \$150,000.

**Charleston, W. Va.**—The Mountain Eagle Collieries Co., Charleston National Bank Building, recently incorporated with a capital of \$75,000, has perfected its organization, and plans are being prepared for the immediate development of about 2,250 acres of coal properties in the vicinity of Heathman, W. Va. Complete machinery and equipment will be installed and electric power drive will be utilized wherever possible. It is proposed to have an initial capacity of 140 tons daily, to be increased ultimately to 600 tons. The work also includes the construction of a power plant for plant service. Lee Stone is manager.

**Bristol, Va.**—The Hazard Blue Grass Coal Corporation, which recently filed articles of incorporation with a capital of \$1,000,000, has perfected its organization and plans are being made for the installation of machinery and equipment in connection with the proposed development of a total of 3,000 acres of coal properties in the Hazard district, Ky. It is planned to have an ultimate capacity of about 2,000 tons daily. Included in the development plans is the erection of a number of miners' dwellings for employees. S. R. Jennings is president; F. A. Garth, vice president, and F. Zulantz, secretary-treasurer, all of Johnson City, Tenn.

**Louisville, Ky.**—The Hazard-Blue Grass Coal Corporation, with a capital of \$1,000,000, is offering \$350,000 worth of preferred stock, through investment houses. This concern was recently incorporated under the laws of Virginia, as a consolidation of the Hazard Coal Co. and Blue Grass Coal Corporation. The mines are located in Perry County, near Hazard, and the general offices are at Johnson City, Tenn. The directors are principally bankers of Kentucky, Tennessee and Virginia. Leases cover 5,000 acres of coal land, the highest royalty rate being 10 cents per ton. The properties are estimated to contain 35,000,000 tons of coal. These mines are laid with good steel, have more than 500 mine cars and ten electric locomotives; ten electric mining machines, three substations, two conveyor lines that cost \$25,000 each; two modern tipples with shaker screens that would cost not less than \$75,000 to erect; electric fans, electric pumps, machine and blacksmith shops. The plant is one of the most complete in the state. J. F. Hatfield, of the Reliance Coal & Coke Co., Cincinnati, Ohio, is one of the incorporators.



## DISCUSSION *by* READERS

EDITED BY JAMES T. BEARD

### Roller Bearings for Mine Cars

*Letter No. 7*—The discussion, in *Coal Age*, regarding the merits of plain and roller bearings, for mine cars, has been very interesting. However, I seriously question the figures presented by Richard W. Harris, in the issue of Mar. 4, p. 455, respecting the cost of lubrication for mine cars equipped with plain bearings.

Last year, we used 746 mine cars, which were scattered among six different mines. These cars were equipped with the Eureka wheel made by Hockensmith. The cars were oiled on an average once every six weeks, using for that purpose No. 119 Keystone grease

For the ten months extending from January 1 to October 31, the grease for lubrication cost us \$1,370.71. The labor cost for applying the grease to the cars was \$204.15 which made a total outlay, for lubricating the 746 cars, during the ten months mentioned, \$1,574.86. Adding one-sixth to this amount, to reduce to a basis of a year, gives a total estimated cost for the lubrication of these cars, \$1,837.34, which makes the average cost, per car, per year,  $\$1,837.34 \div 746 = \$2.46$ , as against  $\$4,380 \div 700 = \$6.25$ , per car, per year, by Mr. Harris' estimate. This is only slightly above his estimated cost for lubricating cars equipped with roller bearings, which was  $\$1,400 \div 700 = \$2$ , per car, per year.

Let me say in addition, that all of our cars are drawn by rope haulage, with speeds that run as high as eighteen miles per hour.

R.

Robertsdale, Pa.

*Letter No. 8*—Referring to the letter of Richard W. Harris, *Coal Age*, Mar. 4, p. 455, relating to roller bearings for mine cars, allow me to say that his reference to the cost of lubricating both plain- and roller-bearing cars has interested me greatly, as I have been operating trucks equipped with both types of bearings.

Our plain-bearing trucks have the cavity-type wheels, which require greasing every 90 days, while the roller-bearing equipment requires greasing but once in eight months. Each roller-bearing car requires eight pounds of grease at 10c. a pound, making the cost for grease 80c. per car, in eight months, or \$1.20, per car, per year.

Two men will grease thirty of these cars a day. They are paid \$5.42, each, for this work, which makes the labor cost, per car,  $2 \times 5.42 \div 30 = \$0.36$ , in eight months; or 54c., per car, per year. This makes the total cost for labor and grease  $1.20 + 0.54 = \$1.74$ , per car, per year.

On the other hand, the plain-bearing, cavity-type wheels, require greasing four times a year, using four pounds of grease per car; or sixteen pounds, per car, per year, at 10c. per pound, which makes the total cost of grease \$1.60, per car, per year.

Two men will grease 50 of these cars, per day, each man receiving \$5.42 a day, which makes the cost for labor  $2 \times 5.42 \div 50 = \$0.22$ , per car, each time they are greased, or 88c. per car, per year. This makes the total cost for labor and grease  $1.60 + 0.88 = \$2.48$ , per car, per year; and shows a saving, in favor of roller-bearing cars of  $\$2.48 - 1.74 = \$0.74$ , or 74c., per car, per year.

Mr. Harris gives the cost of labor for greasing roller-bearing cars four times a year, as taken from his records at the mine, as 40c., per car, per year, or 10c., per car, each time they are greased. At this rate, my cost for grease and labor, for roller-bearing cars, greased once in eight months, would be \$1.20 per car, for grease and 15c., per car, for labor, making the total cost for grease and labor \$1.35, per car, per year.

However, I am satisfied that roller-bearing cars cannot be greased for ten cents, per car, when the car has to be sidetracked, and the cast-iron plug removed from each wheel, the grease put in with a grease-gun, the plugs replaced and the car returned to service again. At the rate of wages paid for this work, this operation would have to be completed in four-and-one-half minutes to reduce the cost to ten cents, per car.

Staunton, Ill.

B. F. MEYER

### Tamping Dynamite

*Letter No. 5*—Referring to the letter of Gaston F. Libiez, on the subject of the need of tamping dynamite, *Coal Age*, Jan. 29, p. 244, I am glad to see that he emphasizes what I have always found an important factor in gaining efficiency in the shooting of coal. Aside from the danger to the health and lives of miners, there are many thousands of dollars wasted annually through ineffective shooting, and the loss in tonnage from the same cause is immeasurable.

Aside from the proper mining of a shot, one of the strongest—in fact I may say the strongest argument, in behalf of the effective use of dynamite and permissible explosives, is the proper tamping of the charge. My own personal experience, as well as data gathered from every reliable source, has convinced me that the most effective results are obtained when a charge is tamped full to the mouth of the hole. The almost invariable custom of using short lengths of fuse and tamping the hole to a fraction of its depth only, gives inferior results.

It was my pleasure to witness a series of comparative tests of black powder and permissible explosives. These tests were made for the purpose of demonstrating the effectiveness of the latter in the blasting of coal. In the course of the demonstration, it was shown that when a permissible powder was tamped to the end of the hole, the results exceeded those that could be obtained by the use of black powder, and there was less hazard or risk

to the miner. Other tests made with partly tamped charges of permissible powder proved that there was a considerable loss of time and energy, which gave unsatisfactory results.

While the fully tamped charge brought the coal down in an excellent manner, the same charge but partly tamped only broke and sprung the coal, and fifteen or twenty minutes of hard muscular effort was then required of the miner to loosen or break down the shot. This was far more time and effort than would have been necessary to properly tamp the charge. Perhaps the fully tamped hole would require a little longer fuse and consume a minute or so more for the fuse to burn to the powder; but the rest and relaxation in that time would do the miner no harm.

#### TESTS NEEDED TO SHOW THE EVIL OF POOR TAMPING AND USE OF SHORT FUSE

The tests to which I refer were necessary at that time, to discourage the use of black powder in shooting coal, which practice has been the direct cause of numerous fatal accidents and gas and dust explosions. At present, it is just as necessary to show the evil attending the use of short fuse and improperly tamped holes, with a view to discouraging such practices.

The miners' chief objection to the use of permissible powders was their increased cost, amounting to about two cents. To offset this, miners resorted to the use of short fuse and improperly tamped holes. But, saving two cents in this manner meant the loss of dollars in effective shooting. Notwithstanding the success of these demonstrations, which showed the effectiveness of fully tamped holes, the practice of using short fuse and half-tamped charges still prevails in many localities, and these will require greater effort to show the fallacy of such methods.

In the explosion of nitroglycerine, as in dynamite and highly nitrated powders, the action is very quick. While it is possible to break a rock by placing the explosive on its flat surface, it cannot be denied that far better results are obtained when mud or dirt is placed over the dynamite. While it is readily admitted that the force of the exploding charge is radiated in every direction, it is only reasonable to conclude that the expansion of the gases is greatest in the line of least resistance; which, in a poorly tamped hole, is along the axis of the hole. On the other hand, a fully tamped hole presents almost equal resistance in the line of the hole as in the solid coal, which will be broken down by the force of the explosion.

Because apparently good results are obtained in an untamped hole charged with a high explosive, many are deceived and led to think that the tamping of such powders is not required. Comparative tests are needed to show that a smaller charge will produce equal results in a hole that is fully tamped. No careful and intelligent miner can fail to profit by such demonstrations. Where the honest miner has made these tests for himself, he has saved time, powder, energy and money, whether he uses a 15 per cent or a 60 per cent dynamite.

Aside from the effective results obtained in shooting coal, the factor of safety in the matters suggested is of equal importance. According to statistics compiled by the Bureau of Mines, about 25 per cent (24.80 per cent) of the fatalities due to blasting coal occur from premature blasts, and only about 3 per cent (2.97 per cent) are ascribed to tamping the holes. Those familiar with

the practice of blasting in coal mines will agree that accidents described as "premature blasts" are chiefly the results of the use of short fuse. The latter tabulation, however, is avoided, as it is a practical admission of the violation of the mining laws. It will also be agreed that many of the accidents due to tamping result from hurriedly trying to get the powder back into the hole with a short fuse, already lighted, attached to it. Let us hope that these practices, which are so dangerous, will be discarded and the reckless habits of miners will give place to a deeper regard for safety.

Thomas, W. Va.

W. H. NOONE.

## Shifting the Worker

*Letter No. 5*—Reading the letters written on this subject calls to mind a statement made by one of our greatest manufacturers and financiers who remarked, "It is easier to finance the building of a large plant than it is to find a man big enough to manage it."

Reflecting on this truth, one is brought to face the fact that the success of any undertaking will depend largely on the ability and judgment of the boss, in selecting and placing competent men in the various positions. Therefore, a boss's business, first and last, is to select the right man for the right place; and to do this he must be familiar with the general order of things, and reserve the power of employing and dismissing every man under his supervision who fails to show the required capability and fitness.

When a change is made from one department to another, or from one job to another, the same care must be exercised. Some of the most serious accidents and numerous breakdowns, causing fluctuations in production, have been due to unwise changes. To overcome the necessity of placing inexperienced men at certain work, which is a common occurrence at a coal mine most any morning when the regular man fails to report, extra men should always be in training.

#### TRAINING WORKERS FOR FILLING HIGHER POSITIONS

A good rule is to train brakemen for motormen, trackmen for brakemen, timbermen for drillers, scrapers for cutters, etc. This should be done on idle days or whenever an opportunity is offered that will not interfere to any great extent with the general order of production. In this way only, can a safe and uniform output be maintained. A common cause of accident is allowing a man to do certain work just because he wanted to do it. The boss is the judge as to whether or not a man is physically or mentally fit for the work he desires. I know of many instances that illustrate this point, but one will suffice to explain. It is as follows:

A young man who was helping on a rockdrill wanted to change to braking on a motor. He was of the right build, but unfortunately had a nervous, excitable temperament. He was given a trial and proved the most anxious man on the job; but it soon developed that he could not keep his head when anything out of the ordinary happened. For that reason the boss put him back on the drill, much to the surprise of the motorman and some others acquainted with the matter. The mine committee took it up with the boss, but quickly agreed with him when it was shown that his first thought was to prevent accidents. Later, however, a new boss put this same young man back on the motor,

with the result that he was killed inside of the first month.

Another case was that of a trackman who was put on braking, a work in which he had had no previous experience. Not being used to running and being continuously on his feet, he tired quickly. I regret to say that this man also was killed when gathering the last trip, before quitting for the day. The accident might have been avoided had the motorman given him plenty of time toward evening. But, as it was, he drove the new man the same as the regular man in trying to quit early.

Still another accident, on the same class of work, occurred when a miner was called out of his place to brake; he was not dressed for the work and was killed by having his ragged trousers caught in a rail joint. An experienced brakeman keeps his trouser legs inside of his socks and wears high shoes.

Occasionally we find men who can do more than one thing well. They should always be encouraged, for they are the most valuable workers and will never be satisfied to continue doing but one kind of work. Changes of occupation on laborious work is the best cure for staleness, which is the greatest detriment to progress. A thinking foreman, with a plan in his head, gets results by keeping his men contented.

Pikeville, Ky.

G. E. DAUGHERTY.

## Are Shotfirers Harmful?

*Letter No. 2*—It was with much surprise that I read a short article in *Coal Age*, Feb. 12, p. 309, in which the writer claims that the employment of shotfirers and the use of shotfiring systems are most harmful and dangerous. The article is unsigned, but apparently the writer is viewing the subject from what he considers would be a saving effected by spending the money that would be used to employ shotfirers, and apply it to the better ventilation of the mines. His concluding statement is "spend just half as much money in real ventilation and make the mines really safe."

If by "shotfiring systems" is meant the electric system of shooting, I agree that this is unnecessary and might well be discarded, whether the firing is done by hand batteries or from the surface. However, there are several reasons why shotfirers should be employed to shoot down the coal after all the miners have left the mine and gone home for the day.

### MINING LAW IN COLORADO

Though not familiar with the requirements of the mining laws of other states, the law of Colorado (Sec. 149) requires the use of permissible powder in all coking-coal mines and mines where safety or electric lamps are exclusively used because of the presence of explosive gas, and in such mines as the chief inspector believes the dust to be highly explosive.

My opinion is that if miners were permitted to do their own shooting in any of the mines mentioned here, it would not be long before some one of them would blow up the entire mine. The law further states (Sec. 158) that, where permissible powder is used, the primers shall be handled only by the shotfirers or shot examiners, who alone shall prepare the charge and fully tamp all shots before firing them.

Speaking of poor ventilation in mines, the employment of shotfirers would eliminate this trouble, as no

competent shotfirer will undertake to fire shots in a mine that is improperly ventilated. The argument advanced by the writer of the article mentioned assumes a condition in the mine that will permit the use of open lights. If the mine is generating gas in any quantity whatsoever, the ventilation must be sufficient to assure safety. In the presence of open lights and the probable use of black powder and squibs or fuse, there is always the possibility of the occurrence of a windy or a blown-out shot, owing to the improper tamping of the powder, overcharging the hole, or a badly placed shot or other cause. Any or all these things are liable to result when miners do their own shooting.

### FATALITIES DUE TO CARELESS HABITS OF MINERS

Many miners have been killed by the explosion of their powder when preparing a cartridge, the accident being caused by a spark from their open light falling into the powder. Frequently the miner will tamp his hole with an iron bar and pay for his heedless act by the loss of his life; or he will cut off the end of the match from his squib, in order to shorten the time of the explosion of the shot, and, as a result, be caught by the flying coal before he can reach a place of safety.

A practice that has often proved fatal to the miner is that of returning to the face to ascertain the cause of a delayed shot, which may explode about the time he has reached the coal. Or, if that does not happen, the miner may be overcome by the smoke and gases of other shots. The practice of shooting off the solid has often produced a blownout shot, and perhaps a local explosion of gas or dust has occurred with fatal results.

### NO ECONOMY IN ELIMINATING SHOTFIRERS

My opinion is that any person who desires to do away with the employment of shotfiring has had no practical experience in the mining of coal in mines generating much gas, or where the coal is friable and contains a high percentage of gas and makes much fine dust. Although in Colorado we have a good mining law that is second to none, it cannot be denied that there is a tendency on the part of mine officials to overstep the law in many ways, and the ventilation of our mines cannot be said to be modern, for which the high cost of operation is responsible.

Shotfirers, here, obtain \$7 a day and ordinarily earn an amount approaching \$2,000 a year. In eight hours a shotfirer will examine, prepare, and charge the holes, and shoot about 400 tons of coal; but he must have good ventilation to insure safety. Let me ask if it would be a saving of time and labor to eliminate the shotfirer, and allow the miners do their own shooting, when a single fatal accident will cost the company about \$3,000. Will anyone say that it will be possible to operate a coal mine a single year and not have some miner blown to pieces by reason of his own or another's carelessness, ignorance or reckless disregard of danger.

In closing, let me say that we have some "honest to goodness safety men" on the inspection staff of this state, and they cannot be classed as "porch lizards." Also, we have superintendents, foremen, firebosses, shotfirers and timber safety men, who know safety from A to Z in respect to mining coal. Somebody would have an awful time in attempting to eliminate from the mining laws of Colorado the requirements relating to shotfirers.

Farr, Col.

ROBERT A. MARSHALL.

## Co-operation Among Mine Officials

*Letter No. 7*—I have been reading the many interesting letters on this subject that have appeared in *Coal Age*; and the discussion is most timely, as co-operation is, to my mind, one of the greatest factors in a coal-mining organization. Without it, it is practically impossible to acquire the highest efficiency.

My own experience in the operation of mines is one that exhibits a marked contrast between one organization where there was harmony and co-operation on the part of every official, and another where there was a great lack of such co-operation. The recital may prove of interest to many others who doubtless have had similar experiences.

### HARD-LUCK STORIES TOLD THE SUPERINTENDENT

A few years ago, it was my fortune to be employed by a coal company, in the position of mine foreman. The superintendent was a man who knew nothing about a coal mine and had no desire to learn. He seldom came to the mine, and never ventured underground.

As will be readily understood, this type of superintendent was always ready to listen to any hard-luck story that a miner was ready to tell him. Not being a practical man, he accepted as truth these tales of miners claiming they had a "bad place, very wet, low hard coal," where they could not earn a living.

In reply, the superintendent would say "Never mind, I'll fix that on pay day"; and, sure enough, when pay-day came these fellows would find, \$10, \$15 or \$25 extra money in their envelopes. This was too good to keep and the fellow thus favored would make his boast at the hotel when drinking, and show his pay envelope. The result was that my best men began to accuse me of giving these fellows a higher rate that enabled them to make the money they did. The trouble was soon traced to its source, however, with the result that the superintendent blamed me.

About this time the president of the company advanced the superintendent to the position of manager, and I was made superintendent and given full charge of the operating end of the business, with instructions to report to the manager.

### CHANGES MADE GIVE INCREASED EFFICIENCY

My first visit to the different mines of the company brought about numerous changes, and others were recommended. Naturally, this stirred the ire of my already cross boss, and caused him to ignore many of my reports, and he also made some effort to start a crusade against me. However, the changes made in the mines, and my treatment of the different foremen and the men brought them to my side; and they always greeted me warmly and expressed themselves as glad to get someone to whom they could talk and who understood their plans and would co-operate with them.

The result of these changed conditions wrought a large increase in the daily tonnage of the mines, while the operating expenses were reduced at the same time. It was not long before the mines were getting in fairly good shape and everything was running smoothly on that end of the business. At this juncture, however, it so happened that I was offered a position with another company, which I gladly accepted. In contrast with the conditions under which I had been working, I will

recite briefly the conditions which surrounded the work in my new position.

The manager of this company was well acquainted with mines and mining conditions, having been associated with the mining of coal from his boyhood. He took a deep interest in every detail. Any change to be made, or any recommendation offered, received his careful attention. The result was that the mines were worked on a paying basis. The company was satisfied and the men likewise. Good feeling prevailed not only throughout the organization but likewise among all with whom the company did business.

I need not say that it has been a pleasure to be associated with a company where the officials' one desire was to co-operate with each other and with their men. From the manager down, each man was on the job doing his best at all times; and there were no idle days, except when there were no cars. It had been the habit of one of the company to invite different ones among him men for a short stay at his hunting camp where they were treated on terms of equality and made to enjoy their trip.

Outsiders have frequently failed to understand why this company has had no labor troubles or strikes to mar the harmony that exists among the workers in their mines. Though my former manager has often tried to get me back, there is no desire on my part to return to the old conditions.

S. D. HAINLEY.

Osceola Mills, Pa.

## Growing Scarcity of Mine Timber

*Letter No. 2*—Regarding the question of how mine roof can be supported without the use of timber, it would seem that the proper answer, or at least, the answer most readily made, would be to advise the use of iron or steel supports, which is not new in mining practice. However, the question of cost is an important one and must be considered in this connection.

The relative cost of different materials that can be used to support mine roof can only be determined by experimenting, for a sufficient time, in order to enable a correct judgment to be reached in regard to the practicability of their use. The results should then be tabulated so as to show the minimum cost per ton of coal mined in the use of each material.

It is common to speak of the "life of mine timber," by which is meant the duration of service up to the time when the wood becomes so rotten or decayed that it is of no further use; or the post is crushed or broken under the weight it should support. The life of mine timber can be lengthened by such treatment as creosoting and other methods known in mining practice. Many of these have been described, from time to time, in the pages of *Coal Age*, and need not be repeated here.

Another method of prolonging the life of timber is to adopt such a method of working as will lessen the load resting on the timber supports, by throwing much of the weight of the overburden over onto the solid coal and by leaving adequate pillar supports that will prevent the crushing of the coal and reduce the liability to squeeze, which is so destructive of timber. These and other methods of conserving timber must be carefully studied. It is of chief importance to draw all timbers from abandoned places, and use these again.

Linton, Ind.

W. H. LUXTON.



## INQUIRIES OF GENERAL INTEREST

ANSWERED BY JAMES T. BEARD

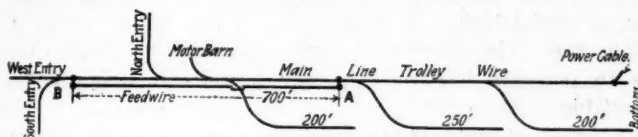


### Feedwire in Locomotive Haulage

Kindly permit me to submit a rough sketch of our trolley wire, showing the present installation in the mine. My desire is to ascertain what gain there is, if any, in the extra feedwire shown as running a distance of 700-ft. from A to B. As indicated in the sketch, power is supplied to the trolley wire from a large cable to which it is connected at the shaft bottom. Branch lines extend into the back entry, as I have shown and tried to make clear in the drawing.

We are operating two 6-ton Goodman locomotives. One of these runs into the south entry while the other operates on the straight west, besides hauling coal from the north entry. The locomotive running south travels a distance of 3,000 ft. from the shaft bottom to the inside parting, which makes 6,000 ft. for a round trip. The locomotive operating in the west and north entries must run a distance 5,000 ft. each round trip. The voltage is 250 volts.

As shown in my sketch, an extra feedwire 700 ft. long has been installed for the purpose, as our elec-



PLAN OF A TROLLEY-HAULAGE SYSTEM

trician says, of enabling the locomotives to operate with greater efficiency. This feedwire is attached or cross-connected to the trolley line by common cast-iron trolley hangers bolted together with short pieces of copper wire. Both the main trolley line and the feedwire are No. 0000. Kindly state if there is any necessity for maintaining this extra length of feedwire.

La Salle, Ill.

ASSISTANT SUPERINTENDENT.

The electrician is right in stating that the feedwire mentioned is required for the more efficient operation of the two locomotives. A 6-ton locomotive operating on a 250-volt circuit will require a current of about 100 amp. The two locomotives, operating at the same time, will call for a current of 200 amp. Both of these locomotives may chance to be at the end of their respective lines at the same time.

In that case, making due allowance for a return either by wire or through the rails, which must be well bounded, the transmission of a current of 200 amp. through a 0000-wire, a distance of 1,200 ft. to the mouth of the south entry, shows a drop of 10 per cent, in voltage, or a loss of 25 volts, reducing the voltage at that point to 225 volts.

Again, the transmission of a current of 100 amp. to the face of the south entry, a distance of 4,000 ft., in-

cluding the return, the round trip from the shaft bottom to that point being 6,000 ft., would mean a further drop of 8 per cent, or a loss of 18 volts, which would reduce the voltage available at the face of the south entry to 207 volts.

Likewise, the voltage at the face of the west entry would be reduced to 212 volts. Owing to this drop in voltage, locomotives would operate at a greatly reduced efficiency.

On the other hand, the 700-ft. length of extra 0000-wire provides an additional 8 volts at the faces of the south and west entries, respectively, affording an increased efficiency of about 4 per cent at each of those points. This increase in the voltage available at the extreme end of the trolley system will be appreciated by experienced motormen, who realize what a drop of pressure means in the operation of a haulage locomotive.

### Arkansas Mining Law

A question has arisen here that has caused considerable discussion of late, in respect to the requirements of the Arkansas State Mining Law, as it relates to men entering the mine when one or more places have been "marked out" as being dangerous for work. Some say that if there are two places marked out by the fireboss when making his examination of the mines, in the morning, it would be a violation of the mining law to permit men to enter the mine. Others say that if but one place is marked out by the fireboss as being dangerous, it is sufficient to prevent the men from entering the mine. Still others claim that there is no requirement of this kind in the law; but that the law is silent on the subject of men being permitted to enter the mine after the fireboss has completed his examination of the workings. I want to ask what the law says regarding this matter.

Russellville, Ark.

J. P. HILL.

The mine regulation specified in Act No. 225 of the Arkansas law, describing the duties of the fireboss reads as follows:

SECTION 10. In all mines where a fireboss is employed, all working places, and worked-out places adjacent to working places, shall be examined when it can be done at least once a day by a competent fireboss, whose duty it shall be to enter a report of the existing conditions of such working places and worked-out places in a well-bound book to be kept by him for that purpose, and all dangerous places that are marked out shall be marked on a blackboard furnished by the company, before any other employees enter the mine.

From the reading of this section, it appears that there are no restrictions placed on the men being permitted to enter the mine, after the fireboss has entered the report of his examination in the book kept for that purpose, and has marked on the blackboard those places where he has found danger. It may be reasonably supposed that men who work in the places reported as dangerous would be instructed not to proceed into the mine, until their places have been made safe.



## EXAMINATION QUESTIONS

ANSWERED BY  
JAMES T. BEARD



### Mine Inspectors' Examination Pottsville, Pa., March 30, 31, 1920

(Selected Questions)

**Ques.**—Name and describe the four electrical units in common use.

**Ans.**—The four common electrical units are the ampere, volt, ohm and watt. The ampere is the unit used to express the strength of the current flowing in a conductor. The ampere, in electricity, corresponds to volume in ventilation, it being an expression for quantity.

The volt is a unit used to measure the electromotive force, and expresses the pressure of the electric current. It corresponds to pressure in ventilation.

The ohm is the unit used to measure the resistance offered by a conductor to the flow of an electric current. A resistance of one ohm requires a pressure of one volt to pass a current of one ampere through a conductor.

The watt is the unit of electric power. It is the power required to pass a current of one ampere, under a pressure of one volt. Seven hundred and forty-six (746) watts are equivalent to one horsepower.

**Ques.**—How is electric current generated before it is transmitted, and how is the transmitted electric power utilized?

**Ans.**—The current is generated by an electric dynamo or generator. The transmitted current is utilized in the operation of an electric motor.

**Ques.**—A current of air entering a mine is 150,000 cu.ft. per minute, at a temperature of 40 deg. F. The air at the outlet measures 165,000 cu.ft. per minute, at a temperature of 65 deg. F. What is the percentage of mine gases present in the air leaving the mine?

**Ans.**—In this case, ignoring the effect of the reduced pressure at the discharge opening of the mine, and calculating the increase of volume due to rise of temperature, we have for the estimated volume of the return air, from this cause,

$$\frac{x}{150,000} = \frac{460 + 65}{460 + 40} = \frac{525}{500}$$

$$x = \frac{150,000 \times 525}{500} = 157,500 \text{ cu.ft. per min.}$$

Then, since the measurement on the return airway shows 165,000 cu.ft. of air and gas, the volume of gas present in that current is  $165,000 - 157,500 = 7,500$  cu.ft. per minute. The percentage of gas present in the return current is, therefore,  $100(7,500 \div 165,000) = 4.54$ , say  $4\frac{1}{2}$  per cent.

**Ques.**—Name and describe the different gases, common to the anthracite mines. What are their dangers to life and their injurious effects on man? Give also

their symbols, specific gravities and properties. Where are they found? How are they produced? Give their effects on combustion.

**Ans.**—Methane or marsh gas ( $\text{CH}_4$ ); specific gravity 0.559, is combustible gas. It is not poisonous, but when breathed in an undiluted state produces death by suffocation. This gas forms an explosive mixture with air. Being lighter than air, it accumulates at the roof or at the face of steep pitches and in rise workings where it may be found in large quantities. Methane is produced by the slow metamorphosis of carbonaceous matter, in the absence of air and the presence of water. This gas is occluded in the coal formations. Having no available oxygen, the gas extinguishes flame, except when mixed with air in proportion to form either an inflammable or an explosive atmosphere.

Carbon monoxide ( $\text{CO}$ ) specific gravity, 0.967 is a combustible gas and very poisonous, small percentages present in the mine air producing instant death when breathed. This gas is formed by the slow combustion of carbonaceous matter in a limited supply of air. It is found in abandoned workings where there is little or no ventilation. It occurs also in the return from a mine fire. The effect of carbon monoxide on combustion is to increase the activity, the gas itself being combustible.

Carbon dioxide ( $\text{CO}_2$ ), specific gravity 1.529, is an extinctive gas, heavier than air. It accumulates at the floor and in swamps, dip workings and other low parts of a mine. It is produced by the various forms of combustion that take place in the presence of a plentiful supply of air; as, for example, the burning of lamps, breathing of men and animals and other forms of active combustion. With the nitrogen of the air it forms the blackdamp, which always accumulates in poorly ventilated mine workings and in abandoned places that are unventilated. Having no available oxygen, it will not support combustion.

Olefiat gas ( $\text{C}_2\text{H}_2$ ) specific gravity 0.978 is a heavy, hydrocarbon gas often associated with methane. Its properties are much the same as that gas. This gas and ethane ( $\text{C}_2\text{H}_6$ ) specific gravity 1.0366, also a heavy hydrocarbon gas, like methane, has been produced in the formation of coal. But unlike methane, both of these gases have been produced in the absence of air and water.

Hydrogen sulphide ( $\text{H}_2\text{S}$ ) specific gravity 1.1912 is a combustible and poisonous gas, having a strong disagreeable odor resembling that of rotten eggs. The gas is formed by the disintegration of iron pyrites in the presence of moisture. The gas seldom occurs in quantity to be dangerous in the mines, although like methane it forms explosive mixtures with air. Having no available oxygen, it is not a supporter of combustion.

## F. G. Tryon Heads Mineral Fuels Division of Geological Survey

Receives Permanent Appointment as Successor to  
C. E. Leshner — Assisted in Economics  
Section at Peace Conference

**F. G. TRYON** has been formally appointed as head of the Mineral Fuels Division of the U. S. Geological Survey. He has been acting head of the division since the resignation a few months ago of C. E. Leshner. His appointment is now made permanent.

Mr. Tryon is a native of Indianapolis, where he acquired his early education. Later he attended the University of Minnesota, where he specialized in economics,



F. G. TRYON

economic geology and mining engineering. He was graduated from that institution in 1914. He took a two-year post graduate course, however, and earned a master's degree. He was elected Rhodes scholar for Minnesota, but owing to the imminence of the war he did not undertake that work.

He spent a short time in the Mid-Continental oil field, where he did work as an oil geologist. While engaged in that work war broke out. He was denied

admission to the army because of physical disability. Determined to do some sort of war work, however, he went to Washington and secured employment as assistant geologist on the staff of the U. S. Geological Survey.

Shortly thereafter he was transferred to the Council of National Defense to take charge of statistics of mineral raw materials, chemicals and explosives. After several months of that work his return was requested by the Geological Survey in order that he might assist in the increased work being done by that bureau in the collection and compilation of mineral fuel statistics.

A few months later Mr. Tryon was commissioned as captain and assigned to the statistical division of the General Staff, where he was placed in charge of statistics on chemicals, fuels and explosives. His duties in this connection made it necessary for him to join the American Expeditionary Forces, where he was attached to headquarters at Chaumont.

After the signing of the armistice Mr. Tryon was transferred to the staff of the Peace Commission in Paris, where he was assigned to the economics and statistical section. Later he became American secretary of the raw materials section of the Supreme Economic Council. With the completion of his work in the economics section he was ordered to return to Washington, where he spent two months completing his statistical duties. On being released from the army he resumed his work with the Geological Survey.

For many years Mr. Tryon has made a special study of matters pertaining to the conservation of mineral fuels. He is convinced that this problem must combine the points of view of economics and engineering. While he realizes that the conservation of fuels is essentially an engineering problem he also is aware of the inability to carrying out policies in that connection in disregard of the dollars and cents consideration.

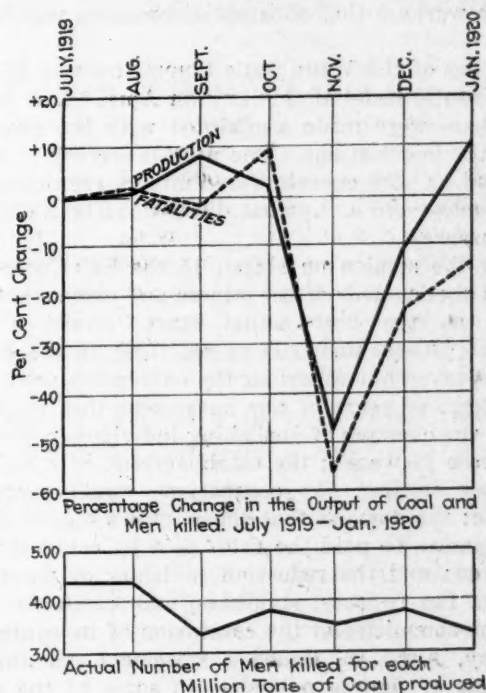
## Have Fatal Accidents Been Reduced by Increased Sobriety?\*

W. W. Adams, U. S. Bureau of Mines, Mine Accident Statistician, Presents This as a Problem as Yet Unsolved

**A** GRATIFYING decrease is noticeable in the number of men killed in the coal mines of the United States during the past six months as compared to the quantity of coal produced. During July last year, when 221 men lost their lives, the production of coal was over 50 million tons. In January, 1920, the production had increased to 56 million tons, or 11 per cent, while the fatalities, instead of increasing proportionately, actually decreased to 188, or nearly 15 per cent. Nor is this decrease a mere accident or coincidence peculiar to the month of January, as may be seen from the following table:

	Production (short tons)	Men Killed	Number Killed per Million Tons
July, 1919.....	50,501,000	221	4.38
Aug. 1919.....	50,805,000	223	4.39
Sept. 1919.....	54,735,000	179	3.27
Oct. 1919.....	64,702,000	243	3.76
Nov. 1919.....	26,389,000	94	3.56
Dec. 1919.....	44,527,000	169	3.80
Jan. 1920.....	56,043,000	188	3.35

From the figures shown above it may be observed that the average monthly production for January and the five months immediately preceding was 49,500,000



HAS LACK OF SPIRITOUS LIQUORS DEPRESSED THE FATALITY CURVE?

\*"Decrease in Coal Mine Accidents," in Monthly Reports on Investigations, U. S. Bureau of Mines.

tons, or only 2 per cent below that for July, while the average number of men killed was 183, or a decrease of over 17 per cent.

The improvement is more clearly shown by the accompanying diagram, based upon the percentage of increase or decrease in the output of coal and the number of men killed, as well as on the actual number of deaths for each million tons of coal produced. The month of July, 1919, has been used as a standard for this comparison because it is fairly representative of the average number of men killed each month since 1911.

It will be noted that during the last six months the accidents have by no means kept pace with the increasing production of coal and that during the coal strike last November the decline in the output of coal was accompanied by an even greater decline in the number of lives lost. It is interesting in this connection to note that a number of large municipalities report an equally important decrease in the death rate from tuberculosis during 1919 and the hypothesis has been advanced that this decrease is due to the effect of prohibition.

## New York Anthracite Wage Conference Still Without Result

Union Officials Profess Difficulty Holding Men in Line  
—Expected That Conference Will Be  
Concluded This Week

**A**NOTHER week of conferences by the sub-committee of anthracite operators' and miners' representatives has failed to bring about an agreement. These conferences have been going on since March 9 and as a result of their duration many workers in the mining regions have become disgruntled and talk of remaining away from the mines until an agreement is reached.

In order to pacify some of the workers members of the Wage Scale Committee who happened to be in New York City last week were sent back to their home towns to tell the workers that substantial progress was being made.

A meeting of the Wage Scale Committee was held at the Continental Hotel of this city on April 14, at which the members were made acquainted with the progress made in the negotiations. The utmost secrecy is being maintained by both operators and miners regarding the progress made and as to what discussions take place in the conferences.

During the session on March 15 the Sub-Committee discussed six demands of the miners and made what was regarded as the first actual start toward a new agreement. These demands as set forth in the official statement given out following the conference were:

"The term of years of any agreement that might be reached; the question of abolishing individual contracts; the increase in wages; the establishment of a uniform wage scale so that like occupations would carry the same rate; the demand that shovel crews operating for coal companies be paid the rates paid by contractors to shovel men; and the reduction in hours of pumpmen, engineers, fan runners, stablemen and watchmen."

The sub-committee at the conclusion of its conference on Friday, April 16, issued a statement denying the correctness of figures published in some of the newspapers on April 16, purporting to show profits of coal-mining companies.

The official statement issued by the sub-committee read:

"At the meeting of the sub-committee of anthracite operators and mine workers held today the mine workers submitted a rejoinder to the operators' exhibit relating to rates, opportunity for employment and earnings. A general discussion followed upon the matter of earnings and increase in wages demanded by the mine workers.

"The committee has not at any time had before it figures and data carried as news by the Associated Press purporting to show excessive profits or profiteering by the anthracite operators."

Further discussion of the increase in wages demanded by the miners took place at the session of the sub-committee held on Saturday, April 17. The sub-committee also gave consideration to the expense of maintaining an average family in the anthracite region because of increases in the cost of food, clothing, rent and coal.

While no official announcement was made, the operators are expected in a few days to issue a statement of the action they will take in regard to the demands of the miners.

The sub-committee of anthracite mine workers and operators met on April 19 and resumed consideration of the matters pending before the committee. Upon the question of increase a large part of the session was devoted to an effort to reach a basic conclusion upon which to predicate an adequate wage scale to the anthracite workers.

That there is much unrest among the radicals in the coal fields was stated by some of the Miners' Union officials upon their return to this city on Monday. They say the delay in reaching an agreement is giving the radical elements a chance for agitation and that this is especially true in the Schuylkill County region. So far the union officials have been able to hold the men in line.

It is reported that the check off and other questions raised by the Bituminous Coal Commission have been under discussion.

## Retail Prices of Coal by Cities from 1913 to 1920

Figures Are Given Only for Cities Which Quoted Prices for Food and in Years When Food Prices Were Scheduled

**A**VERAGE retail prices of coal on Jan. 15 and July 15 of each year from 1913 to 1919, inclusive, and on Jan. 15, 1920, by cities have been published by the *Monthly Labor Review* of the Bureau of Statistics of the United States Department of Labor. The prices quoted are those that were charged by the retail trade for fuel for household use.

In addition to the prices for Pennsylvania anthracite, prices are shown for Colorado, Arkansas and New Mexico anthracite in those cities where these coals formed any considerable portion of the sales for household use.

The prices shown for bituminous coal are averages made on the several kinds. The coal dealers in each city were asked to quote prices on the kinds of bituminous coal usually sold for household use.

The prices quoted are for coal delivered to consumers but do not include charges for storing the coal in cellar or coal bin where an extra handling was necessary.

Prices are shown for coal only in the cities in which prices are scheduled for food and are shown for the years when food prices were obtained.

## Retail Domestic Coal Prices Per Short Ton on Jan. 15 and July 15, 1913-1919 Incl., Also Jan. 15, 1920

City, and Kind of Coal	1913		1914		1915		1916		1917	1918		1919		1920
	Jan.	July	Jan.	July	Jan.	July	Jan.	July	Jan.	Jan.	July	Jan.	July	Jan.
Atlanta, Ga.: Bituminous.....	\$5.875	\$4.833	\$5.295	\$5.083	\$5.250	\$4.575	\$5.050	\$4.500	\$7.000	\$7.444	\$7.778	\$8.029	\$8.250	\$9.050
Baltimore, Md.: Pennsylvania anthracite— Stove.....	7.700 <sup>2</sup>	7.240 <sup>2</sup>	7.700 <sup>2</sup>	7.280 <sup>2</sup>	7.620 <sup>2</sup>	7.138 <sup>2</sup>	7.650 <sup>2</sup>	7.800 <sup>2</sup>	8.160 <sup>2</sup>	9.600 <sup>2</sup>	10.450 <sup>2</sup>	11.983 <sup>2</sup>	11.750 <sup>2</sup>	12.500 <sup>2</sup>
Chestnut.....	7.930 <sup>2</sup>	7.490 <sup>2</sup>	7.950 <sup>2</sup>	7.520 <sup>2</sup>	7.870 <sup>2</sup>	7.363 <sup>2</sup>	7.880 <sup>2</sup>	7.950 <sup>2</sup>	8.310 <sup>2</sup>	9.750 <sup>2</sup>	10.550 <sup>2</sup>	12.042 <sup>2</sup>	11.850 <sup>2</sup>	12.600 <sup>2</sup>
Bituminous.....												7.540 <sup>2</sup>	6.893 <sup>2</sup>	7.500 <sup>2</sup>
Birmingham, Ala.: Bituminous.....	4.217	4.011	4.228	3.833	4.090	3.646	3.913	3.644	5.080	5.616	6.461	6.741	7.286	7.496
Boston, Mass.: Pennsylvania anthracite— Stove.....	8.250	7.500	8.000	7.500	7.750	7.500	8.000	8.000	9.500	9.850	10.250	12.000	12.000	12.750
Chestnut.....	8.250	7.750	8.250	7.750	8.000	7.750	8.250	8.000	9.500	9.850	10.250	12.000	12.000	12.750
Bituminous.....												10.250	9.000	9.500
Bridgeport, Conn.: Pennsylvania anthracite— Stove.....									10.000	10.500	10.400	12.370	11.750	12.500
Chestnut.....									10.000	10.500	10.400	12.370	11.750	12.500
Bituminous.....												9.125	8.000	8.500
Buffalo, N. Y.: Pennsylvania anthracite— Stove.....	6.750	6.542	6.817	6.650	6.850	6.650	6.850	7.010	7.600	8.830	9.180	10.400	10.700	10.890
Chestnut.....	6.992	6.800	7.067	6.900	7.100	6.900	7.100	7.260	7.850	8.830	9.240	10.500	10.800	10.990
Bituminous.....												6.000	8.000	
Butte, Mont.: Bituminous.....					7.417	6.750	7.125	7.125	8.222	9.188	9.083	9.377	9.836	10.381
Charleston, S. C.: Pennsylvania anthracite— Stove.....	8.375 <sup>2</sup>	7.750 <sup>2</sup>	7.750 <sup>2</sup>	7.750 <sup>2</sup>	7.750 <sup>2</sup>	7.750 <sup>2</sup>	7.750 <sup>2</sup>	7.875 <sup>2</sup>	8.750 <sup>2</sup>	12.275		( <sup>3</sup> )	13.400 <sup>2</sup>	13.400 <sup>2</sup>
Chestnut.....	8.500 <sup>2</sup>	8.000 <sup>2</sup>	8.250 <sup>2</sup>	8.250 <sup>2</sup>	8.250 <sup>2</sup>	8.250 <sup>2</sup>	8.250 <sup>2</sup>	8.375 <sup>2</sup>	9.250 <sup>2</sup>	12.475		( <sup>3</sup> )	13.500 <sup>2</sup>	13.500 <sup>2</sup>
Bituminous.....	6.750 <sup>2</sup>	6.750 <sup>2</sup>	6.750 <sup>2</sup>	6.750 <sup>2</sup>	6.750 <sup>2</sup>	6.750 <sup>2</sup>	6.750 <sup>2</sup>	6.750 <sup>2</sup>	7.000	8.000		8.375	8.500	8.500
Chicago, Ill.: Pennsylvania anthracite— Stove.....	8.000	7.800	8.080	7.900	8.100	7.900	8.100	8.240	9.570	10.350	10.900	11.808	12.200	12.590
Chestnut.....	8.250	8.050	8.330	8.130	8.350	8.150	8.350	8.490	9.670	10.388	10.975	12.016	12.300	12.690
Bituminous.....	4.969	4.650	5.000	4.850	5.068	4.708	4.938	4.800	7.083	6.671	6.475	6.700	7.017	8.020
Cincinnati, Ohio: Pennsylvania anthracite— Stove.....	8.250	7.500	8.000	7.917	7.917	7.667	8.000	7.875	10.000	9.500	11.660	( <sup>3</sup> )	12.000	12.500
Chestnut.....	8.750	7.750	8.250	8.167	8.167	7.833	8.083	8.125	10.125	9.500		( <sup>3</sup> )	12.000	12.667
Bituminous.....	3.500	3.375	3.750	3.500	3.500	3.500	3.688	3.500	5.500	6.098	6.725	6.478	6.139	6.739
Cleveland, Ohio: Pennsylvania anthracite— Stove.....	7.500	7.250	7.500	7.500	7.650	7.400	7.650	7.850	9.688	9.825		11.050	11.538	12.300
Chestnut.....	7.750	7.500	7.750	7.750	7.900	7.650	7.900	8.100	10.000	9.575		11.175	11.650	12.233
Bituminous.....	4.143	4.143	4.400	4.571	4.643	4.607	4.643	4.946	8.227	6.901	6.443	6.821	7.710	7.911
Columbus, Ohio: Bituminous.....								3.640	6.400	5.943	6.179	6.088	6.056	6.513
Dallas, Tex.: Pennsylvania anthracite— Chestnut.....												18.000	20.000	22.000
Arkansas anthracite— Egg.....						8.250	9.000	8.375	11.500	14.334	14.250	15.800	14.500	18.500
Bituminous.....	8.250	7.214	7.929	7.150	7.545	6.950	7.458	7.208	10.167	10.139	10.386	10.980	11.083	14.583
Denver, Col.: Colorado anthracite— Stove, 3 and 5 mixed.....	8.500	8.500	10.500	8.929	9.214	9.071	9.333	8.786	9.600	11.750	12.325	12.650	13.150	14.000
Furnace, 1 and 2 mixed.....	8.875	9.000	11.000	9.071	9.286	9.071	9.333	9.071	9.900	11.750	12.325	12.650	12.650	13.500
Bituminous.....	5.250	4.875	6.474	5.300	5.641	5.192	5.250	5.019	6.000	7.598	7.995	8.148	8.348	8.908
Detroit, Mich.: Pennsylvania anthracite— Stove.....	8.000	7.450	8.000	7.500	7.938	7.500	7.950	8.000	9.750	9.880	10.150	11.600	11.890	12.650
Chestnut.....	8.250	7.650	8.250	7.750	8.188	7.750	8.200	8.250	9.800	10.080	10.520	11.710	11.980	12.750
Bituminous.....	5.200	5.200	5.200	5.188	5.179	5.237	5.237	5.611	7.563	8.267	8.180	7.732	7.988	8.781
Fall River, Mass.: Pennsylvania anthracite— Stove.....	8.250	7.425	7.750	7.688	8.000	7.750	8.750	8.438	11.000	10.750	11.000	12.700	12.500	13.000
Chestnut.....	8.250	7.613	8.000	7.688	8.000	7.750	8.750	8.438	11.000	10.750	11.000	12.383	12.250	12.750
Bituminous.....											10.000	10.250	9.500	10.000
Houston, Tex.: Bituminous.....									9.000			10.000	10.000	12.000
Indianapolis, Ind.: Pennsylvania anthracite— Stove.....	8.950	8.000	8.300	7.750	8.250	7.650	8.250	8.500	10.167	9.825	10.250	12.250	12.250	13.000
Chestnut.....	9.150	8.250	8.500	7.950	8.450	7.900	8.450	8.688	10.333	9.925	10.500	12.333	12.250	13.167
Bituminous.....	3.813	3.700	4.611	4.000	4.673	4.208	4.411	4.568	6.800	7.107	6.163	6.875	7.375	8.188
Jacksonville, Fla.: Pennsylvania anthracite— Stove.....	10.000	9.000	9.000	9.125	9.000	9.000	9.000	9.000	11.000	12.000		( <sup>3</sup> )	15.000	17.000
Chestnut.....	10.000	9.000	9.000	9.125	9.000	9.000	9.000	9.000	11.000	12.000		( <sup>3</sup> )	15.000	17.000
Bituminous.....	7.500	7.000	7.125	6.875	7.500	7.000	7.500	7.375	8.000	9.333	9.825	10.000	10.000	11.000
Kansas City, Mo.: Arkansas anthracite— Furnace.....			8.286	7.917	8.333	7.833	8.333	8.125	9.292	12.592	13.700	15.107	13.593	15.950
Stove, or No. 4.....			8.929	8.500	8.833	8.375	8.833	8.667	9.958	13.150	14.200	15.550	14.450	16.583
Bituminous.....	4.391	3.935	4.276	4.093	4.200	4.056	4.515	4.353	6.438	6.703	6.700	7.354	7.469	8.625
Little Rock, Ark.: Arkansas anthracite— Egg.....							7.625	7.625	9.000	11.500	12.750	12.975	12.500	
Stove.....												13.333	13.250	13.333
Bituminous.....	6.000	5.333	6.250	5.833	5.972	5.361	6.000	5.750	8.000	8.250	9.155	9.414	9.250	10.375
Los Angeles, Cal.: New Mexico anthracite— Cerrojos egg.....			17.000		15.000	15.000	18.000	16.000		22.000	20.000	21.150		21.000
Bituminous.....		12.500	13.500	12.000	13.600	11.375	13.700	12.900	15.000	14.881	14.700	14.688	14.583	16.000
Louisville, Ky.: Pennsylvania anthracite— Stove.....	9.000	8.250	8.750	8.450	8.700							( <sup>3</sup> )	12.750	13.750
Chestnut.....	9.000	8.250	8.750	8.450							10.640	( <sup>3</sup> )	12.750	13.750
Bituminous.....	4.200	4.000	4.377	3.953	3.997	3.478	3.816	3.737	5.734	6.038	6.783	6.743	6.816	6.836
Manchester, N. H.: Pennsylvania anthracite— Stove.....	10.000	8.500	8.750	8.500	8.750	8.500	9.000	8.750	11.000	11.000	10.500	12.500	12.750	13.417
Chestnut.....	10.000	8.500	8.750	8.500	8.750	8.500	9.000	8.750	11.000	11.000	10.500	12.500	12.750	13.417
Bituminous.....											10.000	10.000	10.000	10.800
Memphis, Tenn.: Bituminous.....	4.3444	4.2194	4.2194	4.2194	3.8834	3.8384	3.9044	4.0834	6.2224	6.539	7.171	7.221	7.528	8.000
Milwaukee, Wis.: Pennsylvania anthracite— Stove.....	8.000	7.850	8.080	7.930	8.100	7.900	8.100	8.300	9.020	9.500	10.968	12.286	12.400	12.600
Chestnut.....	8.250	8.100	8.330	8.180	8.350	8.150	8.350	8.550	9.270	9.650	10.904	12.378	12.500	12.700
Bituminous.....	6.250	5.714	6.143	5.714	6.143	5.625	6.000	5.875	7.743	7.385	7.385	7.814	8.144	8.960

City, and kind of coal	1913		1914		1915		1916		1917 <sup>1</sup>	1918		1919		1920
	Jan.	July	Jan.	July	Jan.	July	Jan.	July	Jan.	Jan.	July	Jan.	July	Jan.
Minneapolis, Minn.: Pennsylvania anthracite— Stove.....	\$9.250	\$9.050	\$9.350	\$9.133	\$9.307	\$9.150	\$9.350	\$9.900	\$10.350	\$10.826	\$12.238	\$13.708	\$13.800	\$14.000
Chestnut.....	9.500	9.300	9.600	9.383	9.557	9.400	9.600	10.150	10.600	10.926	12.328	13.786	13.900	14.100
Bituminous.....	5.889	5.792	5.875	5.846	5.990	5.960	5.977	6.375	8.077	8.888	8.474	9.000	9.189	10.425
Mobile, Ala.: Pennsylvania anthracite— Stove.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.000	.....	.....	17.000	17.000
Chestnut.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.000	.....	.....	17.000	17.000
Bituminous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.000	9.000	9.429	9.722	10.333
Newark, N. J.: Pennsylvania anthracite— Stove.....	6.500	6.250	6.500	6.250	6.500	6.250	6.500	6.750	7.208	8.100	8.500	9.750	10.050	10.483
Chestnut.....	6.750	6.500	6.750	6.500	6.750	6.500	6.750	7.000	7.292	8.100	8.500	9.750	10.050	10.483
New Haven, Conn.: Pennsylvania anthracite— Stove.....	7.500	6.250	6.571	6.579	7.000	6.750	7.500	7.742	9.500	9.750	10.100	12.050	11.333	12.250
Chestnut.....	7.500	6.250	6.571	6.579	7.000	6.750	7.500	7.742	9.500	9.750	10.100	12.050	11.333	12.250
New Orleans, La.: Pennsylvania anthracite— Stove.....	10.000	10.000	10.000	10.000	10.000	10.125	10.500	11.700	13.100	13.067	.....	(2)	16.000	17.500
Chestnut.....	10.500	10.500	10.500	10.500	10.500	10.625	11.000	12.200	13.500	13.300	14.550	(2)	16.000	17.500
Bituminous.....	6.0564	6.0634	5.9444	6.0714	5.9504	6.0834	6.0914	6.0634	6.9444	8.040	7.789	8.900	8.292	9.269
New York, N. Y.: Pennsylvania anthracite— Stove.....	7.071	6.657	6.857	6.850	7.143	6.907	7.107	7.393	8.500	9.058	9.300	10.757	10.800	11.536
Chestnut.....	7.143	6.800	7.000	6.993	7.286	7.057	7.250	7.421	8.500	9.083	9.293	10.764	10.857	11.600
Norfolk, Va.: Pennsylvania anthracite— Stove.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.000	9.500	11.700	12.500	13.000
Chestnut.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.000	9.500	11.700	12.500	13.000
Bituminous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.750	7.750	8.250	9.375	9.750
Omaha, Neb.: Pennsylvania anthracite— Stove.....	12.000	10.750	10.700	10.700	10.750	10.700	10.750	11.750	13.200	13.188	.....	.....	16.450	17.275
Chestnut.....	12.000	11.000	10.950	10.950	11.000	10.950	11.000	12.000	13.400	13.338	.....	.....	16.550	17.450
Bituminous.....	6.625	6.125	6.125	6.125	6.083	6.167	6.042	6.000	7.857	7.950	7.388	8.471	8.930	10.108
Philadelphia, Pa.: Pennsylvania anthracite— Stove.....	7.1562	6.8942	7.2812	7.0502	7.2502	7.0132	7.2502	7.4942	7.9692	9.5942	9.8062	11.2442	10.8502	11.8812
Chestnut.....	7.3752	7.1442	7.5312	7.3002	7.5002	7.2632	7.5002	7.7442	8.1882	9.6812	9.8882	11.3192	10.9502	11.9062
Pittsburgh, Pa.: Pennsylvania anthracite— Stove.....	7.9382	7.3752	7.7132	7.5502	7.8752	7.5672	7.9672	8.0002	10.5002	.....	11.0002	12.7502	12.7502	13.7502
Chestnut.....	8.0002	7.4382	7.7752	7.5502	7.9332	7.5672	8.0172	8.1002	10.8502	10.1502	11.0502	12.7002	12.6632	14.0002
Bituminous.....	3.1582	3.1762	3.1882	3.1582	3.2252	3.2252	3.3262	3.4502	4.8572	5.2782	5.656	6.000	5.833	6.179
Portland, Maine: Pennsylvania anthracite— Stove.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.890	11.040	13.000	12.200	13.440
Chestnut.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.890	11.040	13.000	12.200	13.440
Bituminous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.453	10.890	10.853	8.573	9.370
Portland, Ore.: Bituminous.....	9.786	9.656	9.625	9.279	9.382	9.224	9.438	9.263	10.276	10.181	10.442	10.566	11.493	11.616
Providence, R. I.: Pennsylvania anthracite— Stove.....	8.250	7.500	7.750	7.450	7.750	7.500	8.750	8.500	10.000	10.500	11.375	12.400	12.000	12.950
Chestnut.....	8.250	7.750	8.000	7.700	8.000	7.750	9.000	8.500	10.000	10.500	11.375	12.400	12.000	13.000
Bituminous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.500	9.000	10.000
Richmond, Va.: Pennsylvania anthracite— Stove.....	8.000	7.250	7.750	7.542	8.000	7.500	7.900	8.000	9.450	9.500	9.900	11.500	12.000	12.125
Chestnut.....	8.000	7.250	7.750	7.542	8.000	7.500	7.900	8.000	9.450	9.500	9.900	11.500	12.000	12.125
Bituminous.....	5.500	4.944	5.423	5.042	5.444	5.023	5.364	5.063	7.268	7.686	7.811	8.222	8.464	8.931
Rochester, N. Y.: Pennsylvania anthracite— Stove.....	.....	.....	.....	.....	.....	.....	.....	7.200	7.750	8.550	9.050	10.300	10.600	10.800
Chestnut.....	.....	.....	.....	.....	.....	.....	.....	7.450	7.900	8.650	9.150	10.400	10.700	10.900
St. Louis, Mo.: Pennsylvania anthracite— Stove.....	8.438	7.740	8.150	8.175	8.333	8.033	8.583	8.500	9.813	10.433	11.000	.....	12.900	13.100
Chestnut.....	8.680	7.990	8.350	8.363	8.500	8.200	8.750	8.750	10.050	10.533	11.250	.....	12.900	13.225
Bituminous.....	3.360	3.037	3.288	3.056	3.214	3.050	3.179	3.073	4.615	5.444	5.893	5.463	5.425	5.970
St. Paul, Minn.: Pennsylvania anthracite— Stove.....	.....	9.050	9.333	9.183	9.350	9.150	9.350	9.883	10.350	10.727	12.248	13.453	13.800	14.000
Chestnut.....	.....	9.300	9.583	9.433	9.600	9.400	9.600	10.133	10.600	10.827	12.417	13.543	13.900	14.100
Bituminous.....	.....	6.041	6.121	6.089	6.167	6.153	6.203	6.610	8.213	9.162	9.148	9.582	9.875	11.531
Salt Lake City, Utah: Colorado anthracite— Furnace, 1 and 2 mixed.....	11.000	11.500	11.500	.....	11.500	11.563	11.714	11.429	12.000	14.000	15.000	15.333	16.000	16.313
Stove, 3 and 5 mixed.....	11.000	11.500	11.472	.....	11.500	11.571	11.786	11.429	12.000	14.000	15.000	15.333	16.000	16.583
Bituminous.....	5.639	5.458	5.580	5.552	5.462	5.462	5.464	5.464	5.658	7.250	7.303	7.875	7.250	8.236
San Francisco, Cal.: New Mexico anthracite— Cerillos egg.....	17.000	17.000	17.000	17.000	16.833	16.833	17.000	17.000	19.000	20.750	18.600	21.550	20.500	23.000
Colorado anthracite— Egg.....	17.000	17.000	17.000	17.000	16.833	16.833	17.000	17.000	19.000	18.600	18.600	19.400	19.400	21.750
Bituminous.....	12.000	12.000	12.091	12.400	12.273	12.333	12.250	12.250	13.429	13.867	14.083	14.200	13.591	15.100
Scranton, Pa.: Pennsylvania anthracite— Stove.....	4.250	4.313	4.500	4.313	4.438	4.125	4.375	4.800	5.250	6.113	6.050	7.475	7.683	8.233
Chestnut.....	4.500	4.563	4.750	4.563	4.688	4.313	4.625	4.800	5.250	6.150	6.150	7.563	7.783	8.300
Seattle, Wash.: Bituminous.....	7.125 <sup>4</sup>	7.200 <sup>4</sup>	6.167 <sup>6</sup>	5.800 <sup>6</sup>	5.906 <sup>6</sup>	5.313 <sup>6</sup>	5.528 <sup>6</sup>	5.750 <sup>6</sup>	5.850 <sup>6</sup>	7.867 <sup>6</sup>	9.133 <sup>6</sup>	9.163 <sup>6</sup>	9.103 <sup>6</sup>	9.588 <sup>6</sup>
Springfield, Ill. Bituminous.....	.....	.....	.....	2.646	2.078	2.094	2.563	2.750	2.706	3.711	3.661	3.832	3.976	3.950
Washington, D. C.: Pennsylvania anthracite— Stove.....	7.500 <sup>2</sup>	7.381 <sup>2</sup>	7.588 <sup>2</sup>	7.419 <sup>2</sup>	7.731 <sup>2</sup>	7.400 <sup>2</sup>	7.625 <sup>2</sup>	7.725 <sup>2</sup>	8.206 <sup>2</sup>	10.100 <sup>2</sup>	9.960 <sup>2</sup>	11.890 <sup>2</sup>	11.911 <sup>2</sup>	12.447 <sup>2</sup>
Chestnut.....	7.650 <sup>2</sup>	7.531 <sup>2</sup>	7.738 <sup>2</sup>	7.569 <sup>2</sup>	7.881 <sup>2</sup>	7.550 <sup>2</sup>	7.775 <sup>2</sup>	7.856 <sup>2</sup>	8.200 <sup>2</sup>	10.190 <sup>2</sup>	10.064 <sup>2</sup>	12.019 <sup>2</sup>	12.011 <sup>2</sup>	12.538 <sup>2</sup>
Bituminous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.700 <sup>2</sup>	7.974 <sup>2</sup>	8.050 <sup>2</sup>	8.267 <sup>2</sup>	.....

<sup>1</sup>Prices not secured by Bureau in July, 1917.<sup>2</sup>Per ton of 2,240 pounds.<sup>3</sup>Zoned out by Fuel Administration.<sup>4</sup>Per 10-barrel lots (1,800 pounds).<sup>5</sup>Per 25-bushel lots (1,900 pounds).<sup>6</sup>At yard, delivery \$0.05 to \$2, according to distance.<sup>7</sup>Prices in Zone A.

## Council of Defense Criticizes High Coal Prices

Government Official Takes Position that Buy-Early Campaign and Car Shortage Should Not Boost Prices

PRESENT high prices of bituminous coal were characterized as inexcusable on any theory of supply and demand or on any economic principle in a formal statement issued by Herbert N. Shenton of the Council of National Defense and formerly secretary of the U. S. Bituminous Coal Commission. Mr. Shenton concludes that neither the advice of the commission to buy and store coal early, the requirements of the export trade, the status of car service, the daily output of the mines, the weather conditions nor supposed shortage of supply explains in any manner the rise in prices, which are out of all relation to the increase in the cost of production caused by higher wages granted by the commission. Mr. Shenton thinks that prices will soon decline.

"The present rise in the price of bituminous coal," says the statement, "can in no way be attributed to the campaign for early buying and storage recommended by the U. S. Bituminous Coal Commission to be carried out by the Council of National Defense. The commission had thoroughly in mind the fact that, owing to bad weather conditions and various other reasons, the removal of fixed prices would doubtless cause a flurry in coal prices for several weeks even after the usual annual drop in consumption of coal.

"The recommendation for the campaign of early buying and storage was that such buying and storage should be urged to commence on or about May 15, when, at the present rate of production, there was reason to believe that production would be in excess of market demand. The plans for this campaign are, therefore, being rapidly developed, and the heartiest co-operation of the largest consumers in the country has been enlisted and pledged.

"There are various causes for the present, and probably very temporary, upward trend in the prices of bituminous coal. Consideration must be given to the fact that there was a rearrangement in the distribution of coal after April 1; that the first week in April happened to include the low production period always associated with Easter, and that high cost production mines, which have for past years been able to operate only because of the fixed price conditions, are making a last effort to obtain what they can.

"A widespread feeling has developed throughout the country that there is going to be a scarcity of coal for domestic consumption owing to the foreign demand. Some persons point to Senator Frelinghuysen's statement of the foreign need for coal. Doubtless a great deal of coal is badly needed in Europe this year, and such as cannot be supplied from other sources will come from the United States, in so far as it can be shipped; but there are very real limitations to our ability to make foreign shipments, and the present large foreign demand is not likely to be continuous enough to warrant the permanent enlargement of dock facilities and the diverting into the coal trade of a large portion of our merchant fleet.

"In spite of the fact that the fleet which was supplying the American Expeditionary Forces was one of the greatest that the United States has ever gotten

together, the total number of short tons conveyed by this fleet to Europe was not in excess of 7½ million tons of cargo from our entrance into the war through April, 1919. During 1919 we exported overseas 7,198,000 long tons of coal. This record was better than that of any other year with one exception. During the first ten months of 1919 we were exporting coal overseas at a greater rate than ever before. It is therefore safe to say that on this basis our coal exports overseas in 1920 cannot exceed 10,000,000 tons, which is only 2 per cent of our total production.

"There seems also to be a misapprehension in regard to production. The weekly reports of the Geological Survey show that in the first quarter of the present year our production was decidedly in excess of the production last year and slightly in excess of the production under high pressure in 1918. There is, therefore, no reason based on the past few months for the skyrocketing of prices.

"The fear of immediate suffering from car shortage seems also to figure in the reasons for the flurry. There were sufficient cars and motive power to distribute this unusual production of the past few months, on account of careful and energetic car distribution. These cars and motive power are practically all available, and, while there is definite need for more of both in order to stabilize the industry, there is no immediate serious threatening of a car shortage such as has not existed during the winter, unless it is necessary, because of emergencies, to divert coal cars for other purposes. The more open weather conditions and the efforts to improve allocation of cars by the Car Service Commission of the American Railway Association give promise of a greatly improved car situation in the near future.

"Frenzied bidding up of prices on the part of coal buyers seems, therefore, at this time to be entirely unjustified. There is no reason to believe that there will be a limited supply of coal for the domestic market or that there will be an increased shortage of cars in the near future, save as it is a part of the general transportation difficulties of the present time. Efforts are being made to stabilize prices through regulations of the Interstate Commerce Commission and by special legislation. The educational campaign for early buying and storage will also tend to stabilize the market."

## Dynamite Home of Manager Laing

As the outcome of a strike which has lasted since Sept. 1 and which arose because the mine workers insisted on closed-shop regulations, attempts have been made to blow up the homes of T. K. Laing, general manager, and John Gilkerson, mine foreman of the Willis Branch Coal Co., at Willis Branch, a point situated two miles from the town of Pax—a name suggestive of a condition that the mining towns of West Virginia cannot be said in general to enjoy. Pax, be it said, is in the southern end of Fayette County.

Striking mine workers are thought to have been the perpetrators of the crime. A heavy charge of dynamite was placed in front of the homes and as a result all the front of the Laing house was blown down, while the Gilkerson house, which sustained less injury, escaped with the breaking of all the windows. The occupants of the residences, which included three women and five children and Mr. Lang and Mr. Gilkerson, were not injured.

## Senate Will Hold Hearings on Frelinghuysen's Coal Bills

Government Officials and Coal Operators Will Present Views in Seasonable Coal Rates and Coal Commissioner Plan

**PUBLIC** hearings on Senator Frelinghuysen's bills providing for a seasonal freight rate and for a coal commissioner will begin April 22. Early witnesses will be Eugene McAuliffe; Commissioner McChord, Interstate Commerce Commission; Commissioner Clark, Interstate Commerce Commission; George Otis Smith, Director, U. S. Geological Survey; Van H. Manning, Director, U. S. Bureau of Mines, and J. D. A. Morrow, Vice-President, National Coal Association. In addition, representatives of the local coal associations will appear.

Senator Frelinghuysen expects to continue the hearings until every angle of the questions raised in the bills have been presented. Senator Frelinghuysen already is convinced that it would be better to have a graduated increase in the rate rather than have an abrupt change which would be certain to result in great congestion during the latter part of the summer rate.

So far as the coal-commissioner bill is concerned, Senator Frelinghuysen is not altogether convinced that the provisions of the bill should be administered in the way specified in the bill which he has introduced. He admits the possibility that it may be better to turn over the administration of the matter to one of the existing departments. There seems to be a widely-held view that there is no need for a new and independent official. It is suggested that the Bureau of Mines could be given whatever new duties are provided in the bill. This would interfere in no way with the existing coal work of the Geological Survey or of the Federal Trade Commission, it is pointed out. If such a plan were adopted, undoubtedly the responsibility would be fixed directly with the Secretary of the Interior.

It is pointed out that the work already in progress in collecting the facts of the coal industry and in planning for improvements in the mining, storing and using of coal largely comes under the Department of the Interior and the new work proposed would be aided by the forty years of experience of the Geological Survey and the ten years of experience of the Bureau of Mines. The machinery already in operation could continue to function without interruption or lost motion under the Secretary of the Interior.

## Business Men Will Gather To Increase Production

**B**USINESS men generally are showing a deep interest in a great gathering of business men from all parts of the country to be held at Atlantic City, April 27 to 29, under the auspices of the U. S. Chamber of Commerce for the purpose of making a comprehensive study of means to stimulate production in industry.

The National Coal Association has delegated a representative group of operators from the bituminous fields to attend the conference and this committee is taking considerable interest in preparing to tell the business men of the country that the coal industry is producing to the limit of its ability with a limited supply of cars.

In calling the business men of the nation together to

discuss this subject the National Chamber announces that lack of production in all lines of industry is a big factor in our present towering prices and that high prices breed social unrest. Many economists and business men are convinced that once production is speeded up and the supply is greater than the demand, there will be an appreciable cut in the prices of necessities.

With this thought as a background, the convention will consider the question of maximum production from its manifold angles. Finance, labor, agriculture, transportation and numerous other phases that enter into the scheme of production will be studied according to their relative importance to a greater output.

Men prominent in each of these lines of industry and commerce will present their views to the convention. The banker will explain the need of extending a helping hand to Europe in order that Europe may become once more a producer rather than a consumer. For more than four years Europe has been depending largely upon the United States for its commodities. The demand has been greater than our industries could meet. The result has been advanced prices. If European industries can be put back on their feet again by supplying them with raw materials and credit, then the strain will be partially relieved, and American industries will be better able to meet the domestic demand.

## Government Officials Oppose Federal Coal Control

Government Scale of Salaries Would Not Secure Men of Sufficient Experience and Ability to Perform Duties

**S**O FAR as official opinion can be judged at this time, it appears that the main features of the coal commissioner bill are regarded as justified. The consensus is that the consuming public is the chief party in interest and needs to be informed as to the facts of the coal situation. There are scarcely any important officials in Washington who are not opposed to unnecessary interference with the coal industry, but they do believe that the Government must have closer contact with it than has been the case in the past.

The average Government official regards the consumer as having a more important interest in the correct conduct of the coal business than have the operators or labor. It may be stated, however, that with the interest of the consumer at heart they are anxious to save him from Government operation of coal mines. The Government only with difficulty can find enough men of experience and ability, at the Government's scale of salaries, to perform the task of exercising some degree of public control of public utilities and it is regarded as entirely impossible for it to undertake to equip railroads and industries with operating executives who would get the results that private initiative and enterprise can secure.

Since it is feared that nationalization of coal mines, with costs enormously higher than at present, is likely to come unless the Government exercises that type of control that joins with the owners, operators and miners in lowering costs, and enforces upon the operators that relation of prices to costs that recognizes the partnership of the consuming public in the industry, there is a generally held belief that authoritative publicity of facts will tend to avert such a calamity.

## Wage Scale Drawn Up In Kanawha Field

**Second Important Field to Accept Coal Commission Awards—Adopts Recommended 60-Day Commission to Adjust Differences**

**A**N amicable agreement, conforming to the findings of President Wilson's coal commission, has been reached by the scale committees of the Kanawha field operators and miners, after a conference which began in Charleston, W. Va., Wednesday morning, April 7. Much of the delay was caused by the attention the conference found it necessary to devote to various differentials and inequalities.

The memorandum provides that "all internal differences are hereby referred to the various districts for settlement with the understanding that only by mutual consent shall anything be done in sub-district, district or wage scale convention that will increase the cost of production or decrease the earning capacity of the men."

Provision is also made for the creation of a commission to investigate conditions in regard to tonnage rates, differentials, inequalities and dead work, and to make report within 60 days from date. The findings of this commission are to be the basis of adjustment of these matters.

The practice of paying bonuses for the purpose of enticing employees from other mines is condemned, and it is agreed that all fines provided for in all agreements shall be automatically collected under penalty of fine.

The text of the agreement follows:

**FIRST**—Resolved, that the award of the Bituminous Coal Commission be accepted and the prices written into our agreement, the advances to be applied on prices in effect on October 31, 1919 the advances to be as follows:

Pick mining .....	24c.
Machine cutting .....	4c.
Machine loading.....	20c.
All room turning, yardage and dead work, 20 per cent increase.	

The award of the commission to apply to all day men, monthly men, and trapper boys.

**SECOND**—Dead work, yardage and room turning is advanced 20 per cent on the prices being paid Oct. 31, 1919.

**THIRD**—The eight-hour day, in effect on Oct. 31, 1919, shall continue. An eight-hour day means eight hours' work in the mines at usual working places for all classes of inside day labor. This shall be exclusive of the time required in reaching such working places in the morning and departing to and from the same at night.

Drivers shall take their mules to and from stables, and the time required in so doing shall not include any part of the day's labor, their work beginning when they reach the change at which they receive empty cars, but in no case shall the driver's time be docked while he is waiting for such cars at the point named.

When the men go into the mine in the morning they shall be entitled to two hours' pay, whether or not the mine works the full two hours. But after the first two hours the men shall be paid for every hour thereafter by the hour, for each hour's work or fractional part thereof. If for any reason the regular routine work cannot be furnished the inside labor for a portion of the first two hours, the operators may furnish other than the regular labor for the unexpired time.

**FOURTH**—All internal differences are hereby referred to the various districts for settlement with the understanding that only by mutual consent shall anything be done in subdistrict, district or wage scale convention that will increase the cost of production or decrease the earning capacity of the men. All rules now incorporated in existing contracts shall remain in force until changed by agreement between operators' and miners' representatives.

It is further resolved that a commission be created by this committee to investigate conditions in regard to tonnage rates, differentials, inequalities and dead work, and to make report of their findings to this committee within 60 days from date, the findings of said commission to be the basis of adjustment of the matters which have been referred to it.

**FIFTH**—The practice of voluntarily paying more than the contract price, either by bonuses or otherwise, which is done ordinarily for the purpose of enticing employees from other mines, and thereby creating discord and disorder in the coal industry, is condemned. It will therefore be assumed in future joint conferences convened for scale-making purposes that all bonuses or advances in excess of wages provided in contract were paid because of physical conditions in or around mines where such methods are practiced, and the wages so paid shall be considered the base price for such mines.

**SIXTH**—Whereas, stoppage of work in violation of the agreement has become so serious as to menace the success and perpetuity of the United Mines Workers of America and our joint relations, this conference instructs the respective district executive boards to meet the operators in their various districts for the purpose of agreeing on a penalty clause where none now exists, and if necessary meet to amend and strengthen existing clauses so as to make the penalty more effective in preventing strikes and violations of agreements.

All fines provided for in all agreements shall be automatically collected, and any operator failing to collect and forward to proper parties such fine shall pay a penalty of \$2 for each employee subject to be fined, the same to be collected and retained in the miners' district organization. And in no case shall any fine be refunded except by mutual agreement of the accredited representatives of the operators and miners.

It is further agreed that where any employee enters suit in the civil courts to recover any fine collected in accordance herewith the district organization shall reimburse the operator for expenses incurred on account of such suit.

**SEVENTH**—That the fulfillment of this agreement is guaranteed by the international union, and the fulfillment of joint agreements entered into in any district shall also be guaranteed by the officers of the international organization, as well as by the officers of the district, and it shall be their duty to see that all such agreements are carried out, both in the letter and in the spirit.

**EIGHTH**—That the price at which house coal shall be furnished the mine workers at the tippie shall be determined by adding to the price in effect on Oct. 31, 1919, the average percentage allowed as an increase on the wage scale, to wit: 27 per cent, and that when the coal is delivered to the miners' houses by the operator the actual cost of delivery shall be added.

**NINTH**—That the prices charged the miners for blacksmithing shall be on the basis of existing contracts; providing, however, that the maximum charges shall not exceed three-fourths of 1 per cent of the miners' gross earnings.

**TENTH**—That explosives shall be furnished the miners at cost, which is to include handling, transportation and insurance. To furnish a basis of charges until the correct figures can be determined, it is understood that for a period of 90 days the price of black powder to the miners shall be \$2.25 a keg, and that for permissible explosives and other blasting material be at cost plus 10 per cent allowance for handling.

**ELEVENTH**—This contract is effective on April 1, 1920, and shall remain in force until March 31, 1922.

## Large Flat Rate Increases Granted in New River District

While there has been some delay between the operators and miners of District 17 in formulating a new wage agreement operators and miners of District 29, which takes in the New River field, were able to reach an agreement in short order at a joint scale meeting held at Charleston on Thursday, April 8. It is stated that the increases granted the New River miners will average as much as 41½ per cent, which is the actual increase for machine mining. The increase in the wages for pick miners, according to Secretary T. L. Lewis of the New River Operators Association, amounts to about 40½ per cent.

Under the terms of the new scale pick miners will receive an advance of 24c. per ton, increasing the rate for pick mining in the Loop Creek fields to 83.11c. per ton of 2,000 lb., as against the former rate of 59.11c. per ton. Under the old contract machine cutting was at the rate of 10.71 c. per ton. The new rate agreed upon is 16 cents per ton.

As against the old rate of 47.32c. per ton, the new rate for loading and scraping, rooms and pillars is

66.03c. a ton, an increase of 18.71c., making a total advance for loading and cutting of 24c. a ton. The new rate agreed upon for loading and scraping, rooms and pillars where the loader pushes cars and lays the track is 70.9c. a ton.

For all employees working in the day time, both inside and outside the mines, the wage advance agreed upon was \$1 a day except as to trappers and boys receiving less than the wages allowed men, the latter class receiving an advance of 53c. a day. For yardage and dead work the increase agreed upon was 20 per cent. Instead of percentage rate advances the increases in the New River field are calculated on a flat rate.

## Granting Injunction, Court Says Sections of Lever Act Are Unconstitutional

Judge Lewis Restrains U. S. Attorney from Presenting  
Alleged Evidence to Grand Jury — Coal  
Companies Contend Prices Were Fixed  
Without Investigation

IN A SUIT brought in the United States District Court to test the constitutionality of the Lever Food Control Act and the legality of U. S. District Attorney Harry B. Tedrow's proposed grand jury investigation into charges of profiteering by Colorado Coal companies, Judge Robert E. Lewis, on April 8, granted an injunction restraining District Attorney Tedrow from presenting his alleged evidence to the grand jury.

The coal companies questioned the constitutionality of the Lever Act and its application at this time. The companies contended that the prices fixed during the war by the President were without investigation, and that the President was incompetent to fix prices; that the war is over; that between the discontinuance of the Fuel Administration in January, 1919, and its re-establishment in October, 1919, costs of production materially increased and no new investigation was made.

The companies also contended that the revival of the Fuel Administration was for a domestic emergency and not in furtherance of the war; that the Government prices were unfair and unjust and that District Attorney Tedrow proposed to prosecute them regardless of these facts.

In granting the restraining order Judge Lewis expressed the opinion that at least certain sections of the Lever Act are unconstitutional and have ceased to function, that the Lever Act was emergency legislation and as such it was extremely doubtful that it had application now to private business.

Upon the handing down of the decision District Attorney Tedrow announced his intention of taking an appeal to the Supreme Court of the United States.

## Bureau of Mines to Hold First-Aid and Mine-Rescue Contest

An international first-aid and mine-rescue contest is to be held in Denver, Sept. 9, 10 and 11, under the auspices of the Bureau of Mines. This event, the bureau points out, is of direct interest to an industry which is second only in importance to agriculture and employs in this country more than a million men in hazardous work.

An idea of the general interest of miners in this practical, humanitarian work is had when it is pointed out that more than one hundred thousand miners already have taken the training course of the Bureau of Mines in first-aid and mine-rescue methods.

## Logan County Fixes a New Scale 135 Per Cent Over Pre-war Rates

In addition to advances previously given voluntarily, the operators of the Logan field have announced advances in wages applying in the Logan County (West Virginia) field running from 20 per cent to 31 per cent, the increase in the pay of miners for the Logan field alone amounting to \$6,000,000. This will bring the annual payroll of Logan mines up to \$26,000,000 a year.

Increases granted by the Logan operators since pre-war days aggregate 135 per cent. The latest advance in the Logan field, effective as of April 1, will mean an increase of 20 per cent for day workers and a 31 per cent increase for loaders. It is estimated that under the new scale now prevailing in the Logan field the earnings of machine men will be approximately \$12 a day and of loaders approximately \$10 a day.

Logan operators are now of the belief that wages paid in the field in which they operate are on a par with wages in the highest paid mines in the country. Miners of the Logan field appear to be well satisfied with the increases granted them.

## Choctaw and Chickasaw Coal and Asphalt Deposits To Be Sold

Coal and asphalt deposits aggregating 394,577 acres in the Choctaw and Chickasaw Nations, Okla., will be sold at auction by the U. S. Government June 15 and 17. Only the coal and asphalt minerals—not the land—will be offered for sale, in tracts of 960 acres each, the sale to take place at McAlester, Okla.

There are 456 tracts, practically all located near cities, towns and railroads, and some are crossed by railroads, so that they are easily accessible and desirable for mining purposes.

The coal is bituminous and semi-bituminous, mostly low volatile bunker coal for steamship use, high-grade domestic coal, railroad steam coal, high-grade blacksmith coal and coking coal. The seams average four feet thick and have an average dip of from 10 to 15 deg., outcropping at the surface and extending to an estimated depth of 2,300 ft. at the deepest part of the basin.

## Convention Discusses New Wages in Fifth Ohio Sub-district

Sessions of the 22nd annual convention of the United Mine Workers of America of the Fifth sub-district of Ohio were begun at Bellaire on Tuesday, April 13, with William H. Roy, president of the district, in the chair. The date originally set for the convention was in March but the convening of the convention was postponed at that time owing to the fact that the Bituminous Coal Commission had not submitted its report. Sessions of the convention were expected to consume the entire week and it was apparent at the time the delegates assembled for the convention that wage questions would consume the major part of the deliberations of the convention since day men employed at many of the mines in eastern Ohio had been on strike claiming that they had not received the full 27 per cent increase.